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Agriculture

THE  
**RURAL MAGAZINE,**  
AND  
**LITERARY EVENING FIRE-SIDE.**



**VOL. I. PHILADELPHIA, First Month, 1820. No. 1.**

IT is not without feelings of anxiety that the editors of the **RURAL MAGAZINE** issue forth their first number to the public; for they are aware of the lasting effect of a first impression, and that they have now fairly embarked in an adventure, the success and the termination of which are alike uncertain. Diffident however as they are of their own abilities, they have full confidence in the excellence of their plan, and the kindness and assistance of their friends. Of the value of this assistance, the work itself will testify; of the plan which they have marked out, it is but fair that the reader should be informed.

A leading object of the *Rural Magazine* will be to furnish correct views of the science of Agriculture, and the various improvements which are daily made or suggested in it. For this purpose the best and most recent European works on the subject will be consulted, and selections made from the American newspapers that are devoted or friendly to the cause. The best information on the subject will thus be condensed in a form less unwieldy than a newspaper, and more popular than in scientific books. We also expect original papers from our agricultural friends, being confident that there is much in the farming of our neighbouring

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counties, well worthy of being widely known and imitated.

Yet, as we wish our Magazine to have an extensive circulation, and to be interesting not merely to the farmer, but to the citizen and the general reader, a considerable part of every number will be occupied with topics of general literature, selections from approved new publications, particularly Biography and Travels. Essays, and information on scientific subjects; and original miscellaneous communications. To original and well written essays, our pages will always be accessible; and we particularly solicit such as will throw light on the history, antiquities, geography, curiosities, and productions of our own country. With the genuine productions of the Muse we shall always be glad to adorn our pages; but we have no desire to patronize the unfledged attempts at versifying, the lamentable ditties with which the public is weekly besieged; for we hold that in poetry there is no tolerable medium.

But to an American and a philanthropist, there are still higher objects to be gained by the circulation of such a paper, than the mere diffusion of agricultural intelligence or general literature. He lives under a system of government which is ideally perfect; and he sees it distorted by the vices and the passions of its sub-

jects. He is the disciple of a religion which breathes good-will to mankind; and on whichsoever side he turns, are to be seen oppression, the darkness of ignorance, self-inflicted wretchedness, and amalgamating corruption. He sees a large portion of the human family held in chains by the very nation that has pronounced all men to be free and equal. The condition of that unhappy race, even when emancipated, excites his deepest commiseration and most anxious fears. He sees the aborigines of our country, a noble race of men, perishing like the beasts of the forest before our approach; and that under every circumstance of wretchedness and degeneracy.—Above all, the great and fatal delusion of war, more bloody than the superstitions of Moloch, still over-spreads the world, and renders man the destroyer of man.

To all these subjects will the *Rural Magazine* be watchful and alive; for the editors believe them to be subjects of the deepest interest, and having relation to our highest duties. He who tills his field, or pursues his occupation with diligence and skill, is a deserving and honourable citizen. He who, in addition to this, cultivates his mind, and stores it with useful and ornamental knowledge, raises himself in the scale of being, and adds to his capacities both for happiness and usefulness.

T.C.

But when he adds to this industry, and to these talents and accomplishments, the benevolence of a Christian philanthropist, and renders them subservient to the welfare of his species, he attains to the highest dignity of his nature, and fulfils all the obligations which devolve on him as a citizen and a man.

Such are the general outlines of our plan; and as we feel no local or political prejudices, they shall never have place in the discussion of any subject which may appear in our columns. Combining in this manner an agricultural, a literary, and philanthropic journal, we look with confidence to the support of our enlightened fellow citizens; and assure them, that no exertions on our part shall be wanting to fill up the measure which we have meted out, and render the *Rural Magazine* deserving of their patronage.

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FOR THE RURAL MAGAZINE.

*To the Editors.*

You are about embarking in a literary voyage, calculated, if ably and prudently conducted, to subserve the best interests of society. Previously, however, to your taking a final leave of terra firma, and before its shores shall recede from your view, it may be the part of wisdom to contemplate the nature and object of your journey, by the steady lights of experience. The

legitimate end of every enterprise of the kind, is to enlighten the understanding, and improve the heart. To produce a result so important, no exertion should be omitted, and no means neglected, to impart a useful interest to your miscellany. Of the truth of these preliminary observations, you are no doubt sufficiently impressed. To please every taste, however fastidious, or to gratify in all respects, the wishes of the million, would be a task altogether hopeless; and which a temperament the most sanguine, would scarcely indulge. However transcendent may be the merit of any periodical journal, and however brilliant its success, should the editor listen at all the avenues of public opinion, his ear will notwithstanding be saluted by many an ungrateful sound. Some readers will complain of what they are pleased to call its dull monotony; while others will lament the sacrifice of what they conceive to be matters of importance, in the pursuit of endless variety.—Those who seek for novelty alone, will sometimes be disappointed; while others will start objections, because sufficient respect is not accorded to the venerated opinions of the olden time. The gay may sometimes meet with nothing to excite the smile of merriment, and the grave and reflecting may regret to find so little solid food for the mind. He, however versatile his talents, who would be a favourite with them all, must first be successful in his chase of the ignis fatuus; or obtain from that fairy region in which the rainbow reposes its brilliant arch upon the earth, its treasures of gold. But if your labours

should happily tend to give "energy to virtue, and confidence to truth," you will not fail to gratify the wishes of those whose approbation alone is worth desiring—the well principled of all parties.

It has been said, and repeated times without number, that to call a rose by any other name, its odour would be equally delightful. Although the fact may be so, the inference that a name is altogether unimportant, cannot be supported on just principles of deduction. Authors, who have reflected the brightest honours on the cause of literature and virtue by their writings, have encountered a difficulty at the very threshold, in selecting for them an appropriate name. It was after some time anxiously devoted to the subject, by which it would appear they considered it a matter of no trifling consequence, that the pious and elegant Addison adopted that of a Spectator, and the Sage of Litchfield that of a Rambler; under which, with such signal effect, to inculcate the lessons of moral truth. It has been observed by one who knew something of the world, that few circumstances contribute more essentially to general success in life, than an engaging first appearance. So, likewise, the garb in which it appears, as well as the name by which it is distinguished, is more intimately connected with the extensive popularity of a work, intended for the general reader, than at first may be supposed. It is gratifying therefore to find, that both these considerations have had with you their due weight.

The *Rural Magazine* will not only be a repository for articles of miscel-

laneous interest, but peculiarly so for every thing connected with agriculture, and a country residence. It is to rural scenes, and rural innocence, and rural employments, that man is principally indebted for many of those blessings and enjoyments, which impart a charm to human existence, and lighten its load of cares and sorrows. The man, whoever he is, that has long been confined to a populous city, will at length with *Shenstone* sicken with the unceasing recurrence of artificial life, and long to breathe the pure atmosphere of the country. He will hail with delight the blue bird, earliest harbinger of spring, and welcome the primrose, eldest daughter of *Flora*, and contemplate with rapture the vernal season, in which youth, and beauty, and melody, walk hand in hand, over verdant lawns, variegated with flowers, inhaling the zephyrs of health. Then he will witness summer, with brown, vigorous, and manly aspects; and autumn, groaning with her ripe and mellow fruits; succeeded by winter, clothed in storms and glittering with pendent icicles; who notwithstanding a sternness of mood, and a manner somewhat uncourteous, is in the hands of a beneficent Creator the minister of great good to man. The fury of the tempest may rage, and the clattering hail beat against the windows; the driving snows may deform the face of day, and nature assume the appearance of old age and decay: notwithstanding all this, that portion of the circling year, of which we are speaking, will continue to have its positive pleasures. These will be closely and intimately united in the domestic circle, where in charming



confederacy they will be found clustering round the *Evening Fire-side*. Who does not associate with this delightful scene his earliest images of innocent gayety and exquisite enjoyment; in which garrulous old age and lisping infancy mingle their voices, and where carking care never intrudes? But as the hours are hastening on with feathery footsteps, they should likewise minister to the cause of mental and moral improvement. The *farmer* should cultivate a taste for reading, and store his mind with useful knowledge; and thus become qualified to assume the dignified station to which, in this happy country, he is fairly entitled. He should remember, that the plough has been guided and venerated by the "awful fathers of mankind;" and that a profession, to which *Cincinnatus* and *Washington* were zealously and practically devoted, and for which the emperor *Charles V.* exchanged his sceptre and his crown, must be intrinsically elevated and respectable. It is among the yeomanry of our country that the love of literature, by whom it is already cherished to a creditable degree, should be more widely and universally disseminated.

In order to promote an object so desirable, may you succeed in assembling at your *Evening Fire-side* a cheerful happy group, who, bidding defiance to the rude clamours of the storm without, shall entertain topics of public utility, while cultivating and improving the domestic virtues; and with warm and expansive gratitude ascribe their blessings to a benignant Providence, *from whom alone they are all derived.*

E.

FOR THE RURAL MAGAZINE.

*Letters of a Citizen to his Friends  
in the Country.*

No. I.

THE establishment of a periodical work, designed in part for circulation among my agricultural fellow citizens, furnishes an opportunity which I have often desired, to address you. In contemplating the dignity and utility which are combined in the occupations of an American husbandman, in estimating the extent of influence which belongs to his character, and regarding his elevated independence, I have long since been led to the conclusion, that the *Farmers* of the soil form the basis of the nation's strength, and ought largely to contribute to its ornament.

In the occasional communications which I propose to make to you through this medium, I shall adopt a plain, familiar, and candid manner; and endeavour to point not only at those errors which certainly exist, but also attempt to suggest how they can be most effectually removed.

"What!" methinks I hear some hardy son of the field exclaim—"who is this that promises to improve our mode of farming?" *A Citizen, forsooth.* Now let us at the threshold understand each other. I do not intend to meddle much, if at all, with your system of agriculture, though I conceive it quite possible for a man who has been born and educated in a city, to furnish important hints for the improvement of rural affairs. My purpose is to interest your attention with subjects which may tend to enlarge and elevate your minds. It is a lamentable fact, that too little regard

is paid to *intellectual cultivation*, among those who till the earth.

A well managed farm, supplied with substantial buildings, and under good fence, is creditable to its possessor, and forms a part of the public wealth. Every individual who thus improves his land, not only enriches himself, but should be considered as a benefactor of the commonwealth. Here, unhappily, the energies of the farmer are limited. This is a radical error. With the pecuniary means which his industry has accumulated, he should increase his own intelligence, and confer upon his children the benefits of *substantial education*. I do not admit as truth, what is frequently asserted, that the best examples of morality and virtue are to be met with in the country; for wherever the improvement of the mind is neglected, those ennobling qualities will be rarely found. It is idle to suppose that our intellectual capacities will yield fruits which dignify and adorn our nature, if they be solely devoted to increase our worldly possessions. The plough turns up from the soil no nourishment for the mind, neither do the scythe and sickle prostrate the vices of the heart.

Abstractedly, therefore, a man may be as destitute of good principles who lives amidst rural scenes, as he whose pursuits confine him to the busy haunts and contagious influences of the multitude.

But I am beginning to lecture before I have an audience. I took up the pen merely to introduce my proposals to your notice. You have a specimen of my way of thinking. If you like it, so much the better; if

not, I cannot promise to serve a more palatable dish—but am always your friend,  
CIVIS.

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[The subject of the Missouri state bill, involves, in our opinion, an agricultural question, important to the last degree to the farmers of America:—Whether that great country west of the Mississippi, compared with which all the United States are small, shall, in future ages, be dotted over with pleasant villages and comfortable farm houses, and cultivated by the industrious owners of the soil, each vying with his neighbour in beautifying the face of nature: or be blotted and defaced by innumerable wretched habitations of miserable slaves, with here and there, on distant eminences, the lone mansions of their masters. Whether that great country, now left rich by nature, shall be converted into barren wastes by continued exhausting crops of tobacco and Indian corn, without one shovel-ful of manure to invigorate the expiring soil, as has been the case in some of the fine districts of Virginia and Maryland; or whether it shall be covered with luxuriant fields of wheat, rich meadows and innumerable herds.—Viewing this great national question, so intimately connected with our favourite subject, we feel the more interest by giving an insertion to the following communication of our correspondent SANDFORD.]—*Ed.*

FOR THE RURAL MAGAZINE.

### *Extension of Slavery.*

It is the great and distinguishing feature of our free government, that it is built upon the eternal principles of justice and rectitude. The passions and the interests of its subjects or administrators may pervert its original design, and wield the power it confers to the purposes of oppression or licentiousness. So long, however, as we have access to the charter of our

constitution, the great original fountain of our laws, we may renew or purify those streams which have become choked up or polluted. It forms a perpetual and unerring standard by which to judge of principles and policy; and whatever measures are found wanting in its scale, may safely be pronounced to be unwise and unsound. The flux and change of opinions and interests, the perpetual encroachments of wealth and power, the decay of old prejudices and jealousies, and the rise of new ones, wear away continually the old landmarks, and imperceptibly give to our institutions a new aspect and new bearings. While we admit this flexibility to be in a certain measure necessary for the conservation of peace and union, we must steadily insist upon its being limited by the great leading features of the constitution, and that reference should constantly be had to first principles, as to a fountain of life and strength.

Never, surely, has there been a question agitated, in which those principles were so deeply at issue, as in the one which is now before the American people. I need scarcely say, that I allude to the Missouri state bill, and to the introduction of slaves beyond the Mississippi. This subject has been ably and repeatedly discussed. A universal expression of sentiment has gone forth from the people of the northern and middle states, and it has awakened powers of eloquence and argument that have seldom been surpassed. That first burst of emotion has subsided; and now that the question is upon the point of being settled, it may not be altogether use-

less to recall the attention of the public to the subject.

That slavery is a crime against God and nature, and that its existence in our free country is a most dangerous and lamentable evil, cannot be doubted. Our only apology as a nation for its existence, is, that we found it among us, and that an overruling necessity obliged us to leave its extirpation to the hand of time and experience.

The august founders of our republic have not once named it in the constitution, as if they were unwilling that so foul a name should stain the purity of our escutcheon, as if it were a crime against humanity too execrable to be uttered. They looked forward to a period when it should cease and be forgotten, and made ample provision for its future annihilation. Their solemn declaration to the world, "We hold these truths to be self-evident, that all men are created equal; that they are endowed by their Creator with certain *unalienable* rights, and that among these are life, *liberty*, and the pursuit of happiness," had otherwise been the worst of mockeries.

The words of the constitution, "The migration or importation of such persons as any of the states *now existing* shall think proper to admit, shall not be prohibited by the Congress, prior to the year 1808; but a tax may be imposed on such person not exceeding ten dollars for each person,"—clearly show, beyond the possibility of a cavil, that the right to legislate concerning slaves is vested in the general government, and that the convention was fearful that the attempt to exercise it might be

made, before the southern states were prepared for any laws upon the subject. The Congress has, in fact, uniformly exercised this right in all its laws for the government of the new states and territories. It prohibited the importation of slaves and their migration into the northwestern territory. The states which ceded the territory south of the Ohio, and east of the Mississippi, were fully aware of this power of Congress; and they ceded it with certain stipulations in favour of the slave holder. Yet even over the states which were formed in this region, has Congress exercised its power, and secured to the slave the right of trial by jury and of the habeas corpus. All these laws were passed without exciting any suspicion that Congress was transcending its powers in thus clogging the constitutions of the new states. They were regarded as decent and becoming in a government founded in justice and freedom, "as extending the fundamental principles of civil and religious liberty." That northwestern territory offered no inducement to the slave holder, or to a slave agriculture. Now, however, the case is altered. A province adapted to the cultivation of cotton and tobacco, and in obtaining which the government made no stipulations in favour of slavery, claims to be elevated to the rank of a state. It is a desirable situation for the planters, and holds out from its situation and fertility a golden prospect. They claim accordingly to be admitted there, with their slaves; and a clamour is raised because the people of the United States are unwilling further to extend slavery—to sacrifice

the principles of our republic upon the altar of avarice.

The pretence—it scarcely deserves the name of argument—is, that such restriction would be *unconstitutional, oppressive, and inexpedient.*

It is UNCONSTITUTIONAL!—The refutation is a part of our history, and is written in the pages of our statute book. It is OPPRESSIVE! It would exclude the southern states from sharing in the benefits of these new settlements. Are not the lands open to all, and disposed of at public sale? They can only be made valuable, it is true, by incessant labour, under severe privations. But this the hardy yeomanry of the eastern and middle states are willing to endure for the sake of independence and an establishment for their families. We see them accordingly in the van of our empire, subduing the forest and filling the wilderness with the busy sounds of industry and contentment. Are the slave holders of the south a privileged order, that these labours would demean them? Are they oppressed by being placed on an equality with their brethren of the north, who leave behind them all the artificial distinctions and luxurious indulgences of society? Are not their arms and limbs as capable of labour, and their bodies of fatigue? Where then is the inequality and the oppression? A citizen of a slave holding state, at home, and under his state laws, may be a petty monarch; and he is apt to fancy that he derives the power from an inherent birth-right. But out of his state, and from under its laws, he is an individual unit, a mere citizen of the United States; and can claim no privilege



which is not granted to every American, or which is opposed to the spirit and intent of the constitution. That constitution pays no respect to persons. It does not recognise the existence of slavery; and the petition to admit it in the new states, is a glaring mockery of its character.

It has been contended, that after the state was organized, the inhabitants might assemble in convention, and alter the constitution in this respect. Such an assertion betrays the grossest ignorance of the true principles of the Union. Our government is emphatically a *compact*, originally between the people; and since then, between Congress as their representative and the new members. It is binding on both sides, and the terms of admission are, that Congress approves of the constitution which the state has formed. Its power of rejection, it is true, is limited to certain points. But upon those points that power is absolute; and amongst them, without a shadow of doubt, is *slavery*. The state which, having accepted of a limitation to its power in this respect, should presume to alter it, would set that power at defiance.

But the restriction is **INEXPEDIENT!** And what is the amount of inexpediency? Some thousands of dollars less to the public revenue—some hundreds of thousands less in the sale of public lands! Forbid it, Justice! forbid it, the Genius of the Constitution! that we should barter our free inheritance for a mess of pottage; that the countrymen of Washington should coolly calculate the profits of a desertion of principle. But not only is the restriction not inexpedient, it is called

for by the clearest dictates of sound policy. We are now entering upon a region of almost boundless extent and fertility, destined at some future day to be the abode of millions of human beings. Upon the decision of the present question, in all probability, will it depend, whether that population will be a free and industrious race, or whether the great majority will be bound in the chains of slavery, stinting the growth and paralyzing the energies of the community.

If it be fairly decided that slavery shall not exist to the west of the Mississippi, we shall soon see the rich vallies of that territory occupied by industrious farmers, proving what is no doubt the fact, that freemen can cultivate the staple commodities of that country more advantageously than slaves. Let us for a moment contrast the opposite pictures which are here presented.

The privileged order of the southern states have, it is true, every temporal blessing they can desire, save that of security. But their hordes of slaves—a million of labourers, chained down to cheerless and incessant toil, shrouded in utter intellectual darkness, cut off from all that ennobles and adorns existence, stationary amidst the general march of improvement, and sold and driven about like herds of cattle;—is there not in this picture, retouch it and soften it as you may, subject for bitter regret? and is there nothing to cheer the heart of the patriot in the reverse? A country studded with villages and farms; a smiling and contented population; intelligent, virtuous, and industrious, and the strength and the pride of the

nation, and becoming in its turn the hive for fresh swarms of emigrants. This is no exaggerated or romantic representation. These opposite conditions exist in our country; and Congress have now to decide which of them shall give its features to the western valley of the Mississippi.

But it is from motives of humanity and security, say some, that we plead the extension of slavery. The evil will thus be diluted and lessened. Admirable politicians! profound economists! A poisonous plant has overgrown one of your fields, and you seek to extirpate it by spreading the seeds throughout your possessions! A concealed fire is smouldering in your house, and you would prevent its conflagration by scattering the embers upon your neighbours' dwellings!

It is not thus that slavery is to be mitigated or done away. Confine slavery within its present limits, and we may then hope to see it extinguished. We are young, and may outgrow it. There is a great body of active and enlightened philanthropy in the southern states; and it may yet devise means for its extinction. Build around it a circumvallation of freemen, and you render impotent its fearful threatenings. But give to it that principle of indefinite increase which our white population derives from the inexhaustible extent of our country, and you spread it over the face of the Union; you clothe it a hundred fold with terrors; you render it coeval with our empire.

But not only this. The slave trade from Africa to the United States will never be abolished, if we allow of slavery to the west of the Mississippi.

So great will be the value of slaves along the rich bottoms of that territory, that no laws, however severe, can put a stop to their importation. That accursed traffic is even now carried on with impunity, and to an incredible extent. Fifteen thousand victims have been worse than immolated at its shrine within a single year. With greater temptations to engage in it, in more remote situations, and along an unguarded frontier, no human power can altogether check it.

Nor will it be merely a foreign slave trade that this extension will encourage. An internal traffic will take place. The poorer and more healthy states will become the breeders for the new and unhealthy districts; and it will happen as it has ever done, that the pursuit of a trade, wicked and cruel in itself, will entail the commission of crimes, the violation of every moral law, *the begetting of offspring for the purposes of an unholy traffic*. A deadly taint will spread over the morals and character of our country, which not all our professions of liberty can purify; and if there be any prophecy in history, the rights of these long degraded beings will one day be vindicated with awful retribution.

I have treated this subject with warmth; with more warmth, perhaps, than has served my cause. But I cannot think without indignation of the attempt which is now making to extend the empire of slavery—a despotism in the bosom of a republic; and which I believe to be pregnant with the most disastrous consequences. It is necessary that the public mind should be kept awake on the

subject; and I cannot refrain from lifting up my feeble voice on the occasion.

One word more, and I have done. The division in Congress upon this subject, has been truly called a geographical division. The members from the south, with scarcely an exception, voted for the introduction of slaves. Yet from the same quarter do we hear of splendid schemes for colonization and emancipation, for eradicating slavery, and pouring the light of civilization and religion upon ravaged and benighted Africa. Many of the most conspicuous actors in this great scheme of benevolence, are the men who have exerted all their talents upon the floor of Congress to increase the evils over which in another place they mourn; to sink us still deeper in the dangers into which they have confessed we are plunged.

What are we to think, Gentlemen, of the purity of your motives, or the sincerity of your professions? Is it that your fears, and not your benevolence, impel you; that you wish to rid yourselves of the free blacks, and rivet and extend your dominion over the slaves? If these imputations are false, show yourselves at least to be consistent. Do not by your own act extend the evils you so eloquently regret. Give us that proof of the sincerity of your benevolence (the only one we can believe) that it is stronger than your sense of private interest. Prove to us that you are honestly bent upon exterminating slavery, and there are thousands who now stand aloof, that will join you with all their strength in any scheme that can effect it; thousands, whose daily prayer is, that the

mercy of an all-just Providence may avert from our country the calamities of a servile war and a divided empire.

We ask of you no extravagant or impracticable scheme of emancipation. We do not wish to see your Helots invested suddenly with privileges which they would only abuse; nor do we look *for your relief and theirs*, to any other means than those which time and cautious experience may suggest. But we beseech you, as you are sincere in your plans of colonization, as you value the fair fame of our common country, as you regard the security and prosperity of all future generations—to stay the plague of slavery from spreading, and to give to the inhabitants of the Missouri a charter which shall not disgrace the great principles of our revolution, nor *allow man to be the tyrant of his fellow man*.

SANDIFORD.

#### FAMILIAR LETTERS

*From an Englishman in this country to his Friend at home.*

(Communicated for the Rural Magazine.)

No. I.

PHILADELPHIA, Sept. 8, 1819.

MY DEAR G.—You will perhaps be surprised at my dating this letter from this place, but I shall shortly explain to you the reason. We arrived in perfect safety at Baltimore on the 6th inst., after a very pleasant passage; not unusually short, but rendered exceedingly *comfortable* (that dear English word, although they have here naturalised it, as they do almost every thing that comes from us,) by the kind, social,

and attentive manners of Capt. —. To give you a detail of all the circumstances of our voyage would be unnecessary. I do not wish to nauseate you with the revolting particulars of a landsman's initiation to the ocean. We had not that humiliation to undergo which would have been our lot if the equinoctial had unfortunately crossed our path; but we had enough to inspire us with a perfect sense of our own inferiority to, and dependence on that Power that can rule the winds and the waves. However, our dear Mrs. and Miss — were so much affected by the motion of the ship, and other associations, that we enjoyed very little of their company. The first appearance of land, even that land, which since my recollection has been supposed to be inhabited by spirits, hostile in late, although similar in early habits to ourselves, was greeted with most sincere satisfaction. That land was inhabited by Christians, by men like ourselves, derived from the same origin, boasting of equal laws adopted from our code in general principles, and operating like our own upon freemen. We were landed in consequence of an unfavourable wind, at Norfolk; where, although we staid but a few minutes, I was sorrowfully convinced that all the inhabitants of the land I was visiting were not freemen.

A public sale of blacks was about to take place, and my first introduction to the country I had so joyfully pictured, was associated with feelings to which I had till then been a stranger. Poor wretches, thought I, as they passed badly clothed and ma-

nacled through the streets, you give an alien a strange idea of the consistency of your rulers, and a lamentable evidence of the truth of the political axiom, that those who feel power, forget right. As I shall probably visit Norfolk in common with the other maritime towns of Virginia, before I return, sufficient interest has been excited in my mind to enable me to assure you, that I shall give you further details of the situation of that unfortunate class of human beings.

From Norfolk our voyage to Baltimore surpassed all my former ideas of rapidity. We passed up to Baltimore in so short a space of time, and in *such* a steam-boat, that I dread your incredulity were I to give you particulars. Let it suffice that *but a few hours* brought us to Baltimore, reputed to be in commercial importance the fourth city in the Union. You know it was my first object to visit the respectable gentlemen in this place to to whom I have letters, and most of whom have at one time or another done business with our house. But on the instant of my arrival I was utterly confounded by the intelligence that the yellow fever, that scourge of America, and so justly dreaded by all Europeans, but more particularly by the inhabitants of northern climates, had made its appearance at a place called Fell's Point, either in the vicinity of the city, or forming one of the suburbs; I was in too much consternation to learn which. Indeed I was so much annoyed by the continual reports of the *yellow fever at the Point*, and what they called the *bank fever* in the city, that I could hardly tell where I was, or what I was to do.—



Luckily, a very good looking gentleman, seeing my perplexity, and imagining—for I cannot tell how else he happened to fix upon me—that I was an Englishman, told me that I could not get out of the city of Baltimore too soon, because it had had the curse of Cain upon it ever since the celebrated mob business (that we heard our Maryland friend R. speak about) some years ago, that it had the plague at the Point, and the yellow or white fever, he did not care which, at the other end of the town. This would have been news almost enough to frighten our lamented friend General R. (if he ever could have known fear;) and instead of visiting the spot where he terminated his brief career in this world, which I intended to have done on the moment of my landing, as performing the last pious act of duty to his memory that affection demanded, I determined to fly from this new enemy with almost as much precipitation as the Yankees (by our official accounts) fled from our departed hero in his various incursions in the states, adjoining the waters of the Chesapeake. I ordered a post chaise *instantly*. The servant replied, “it went before day, sir.” Is it possible, said I, that at a house frequented as this is, (Mr. G’s.) there is but one post chaise. Get me one at any rate, I returned in a pretty quick tone, and have my baggage put to it immediately. “Why, master,” rejoined George, (I thought the better of him for his name, and perhaps, novice as I am, because he was black) “there is no other post chaise till to-morrow; but the steam-boat will go at five o’clock, master, if that will suit you.” It wanted but

a few minutes of that hour. I leaped into a hackney coach, (which by the way I was surprised to see in such a new country, unless it had been moved by steam) and ere the hour had struck, was safe on board a very commodious vessel, furnished with every thing to make a night passage pleasant.

It is upwards of one hundred miles from Baltimore to Philadelphia, by land, even by their lately improved roads; yet, with no interruption except being transported some sixteen or twenty miles over good roads, in very bad stage coaches, we enjoyed ourselves in our births till I was awakened before nine the next morning, by the steward, who informed me we were at the wharf, in the place of our destination.

I forthwith repaired, as my previous instructions directed, to the large and commodious hotel of Mr. R.; where I met with several of my old friends, and some quondam fellow-voyagers, who, influenced by business, or perhaps the same instinctive dread of yellow fever with myself, had found their way to this city.—Here, my dear W., I still remain. In the twenty-four hours that have scarcely elapsed since my arrival, I have seen nothing distinctly; for after the monotony of a sea voyage, and the dizziness consequent on an exchange from the ocean to *terra firma*, some few days must be allotted to repose.

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### Treatise on Agriculture.

#### SECT. I.

On the Rise and Progress of Agriculture.

The origin of this art is lost among the fables of antiquity, and we have to

regret, that in the present state of knowledge, we are even ignorant of the *time*, when the plough was invented, and of the *name* and *condition* of the inventor. When therefore we speak of the beginning of the art, we but allude to certain appearances which indicate its existence, and the employment given by it to the minds, as well as to the hands, of mankind. Such were the artificial canals and lakes of Egypt. Menaced at one time by a redundancy of water, and at another by its scarcity or want, the genius of that extraordinary people could not but employ itself, promptly and strenuously, in remedying these evils, and eventually, in converting them into benefits; and hence it was, that when other parts of the world exhibited little more of agricultural knowledge than appertains to the state of nature, imagined by philosophers, the Egyptians thoroughly understood and skilfully practised *irrigation*, that most scientific and profitable branch of the art.\* Like their own Nile, their population had its overflow, which colonized Carthage and Greece, and carried with it the talent and intelligence of the mother country. The former of these states, though essentially commercial, had its *plantations*, and so highly prized were the agricultural works of Mago, that when Carthage was captured, they alone, of the many books found in it, were retained and translated by the Romans. A similar inference may be drawn from the history of Greece; for assuredly that art could not have been either unknown or neglected, which so long employed the pen and the tongue of the great Xenophon.† It must however be admitted, that of the ancient nations, it

\* The best practical illustration of this opinion is found in the valley of the Po—where “every rood of earth maintains its man.”

† Xenophon wrote several treatises on husbandry, and gave public lectures on it at Scillonte, whither a weak and wicked government had banished him.

is only among the Romans, that we find real and multiplied evidences of the progress of the art; *facts*, substituted for *conjectures* and *inferences*. Cato, Varro, Columella, Virgil and Pliny, wrote on the subject, and it is from their works we derive the following brief exposition of Roman husbandry.

The plough, the great instrument of agricultural labour, was well known and generally used among them; it was drawn exclusively by horned cattle. Of fossile *manures*, we know that they used *lime*, and probably *marle*,\* and that those of animal and vegetable basis, were carefully collected. Attention to this subject, even made part of the national religion; the dunghill had its god, and Stercutus, his temple and worshippers. Their corn crops were abundant; besides *barley* and *far*,† they had three species of *wheat*; the *robis* or red—the *siligo* or white—and the *tritium trimestre*, or summer wheat; they had besides millet, panis, *zea* (Indian corn) and rye, all of which producing a flour convertible into bread, were known by the common name of *frumentum*. Leguminous crops were frequent; the lupin in particular was raised in abundance, and besides being employed as a manure,‡ entered extensively into the subsistence of men, cattle and poultry. The cultivation of garden vegetables was well understood and employed many hands; and meadows, natural and artificial,

\* For the first part of this assertion we have the authority of Pliny; for the latter, the practice of their colonies both in Gaul and Britain.

† Of this last, there were three kinds, neither of which is now cultivated.

‡ The lupinus albus of Linneus: “many other vegetables are used for this purpose, particularly the *bean*, but do not answer as well as the *lupin*; when this is heated in an oven and then buried, it forms the most powerful of all manures.” T. C. L. Simonde. *Tableau de L’agriculture Toscane*.

were brought to great perfection. Lucern and fenugrec were the basis of the latter, and peas, rye and a mixture of barley, beans and peas, called *farrago*, were occasionally used in the stables as green food. Their flocks were abundant, and formed their first representatives of wealth, as is sufficiently indicated by their word *pecunia*. Vines and olives, and their products (wine and oil) had a full share of attention and use. The rearing of poultry made an important part of domestic economy, nor were apiaries and fish ponds forgotten or neglected.

If we pause for a moment, to glance at the civil institutions of this wonderful people, we discover how soon and how deeply it entered into their policy, not merely to promote, but to dignify agriculture and its professors.\* When Cicero said, that "nothing in this world was better, more useful, more agreeable, more worthy of a free man, than agriculture;"† he pronounced, not merely his own opinion, but the public judgment of his age and nation. Were troops to be raised for the defence of the republic? The *tribus rusticus* was the privileged nursery of the legions!‡ Did exigencies of state require a general or dictator? he was taken from the *plough*! Were his services rewarded? this was done not with ribbands or gold, but by a donation of *land*.§

With such support from public opinion, it was not to be supposed that the laws would be either adverse or indifferent to this branch of industry. We accordingly find the utmost security given to the labours of the husbandman;|| no legislative interposition between the seller and buyer,

neither forced sales—nor limitation of prices—and a sacredness of boundaries never disturbed;\* fairs and markets multiplied and protected against invasion or interruption,† and highways leading to these every where established, and of a character to call forth benedictions and admiration.‡

Nor were these regulations confined to the proper territory of Rome. What of her own policy was good, she communicated to her neighbours; what of theirs was better, she adopted and practised herself. Her arts and arms were therefore constant companions. Wherever her legions marched, her knowledge, practices, and implements followed; and it is to these we are to look for the foundation of modern agriculture in Italy, France, Spain, &c. [*Albany Argus*.

(To be continued.)

### The Moral Plough Boy.

"In the morning sow thy seed, and in the evening withhold not thine hand."

The words of our motto were probably addressed by an Eastern monarch to those of his subjects, who followed husbandry, and to whom the importance of early rising was the greater, as the climate was excessively warm, and the stoutest labourer found the noon-tide heat too powerful for the energies of his frame to encounter.—This is the case in most of the oriental climes, where the morning and the evening are improved by the cultivator of the soil, as well as the man of business of every class, cast or profession.—The middle or hottest part of the day is, in those countries, given to ease and relaxa-

\* Tanus and Numa were deified for services rendered to agriculture.

† Cicero de officiis. L. 2.

‡ This continued till the time of Marius.

§ As much as he could plough in a day.

|| To cut or destroy in the night the crop of his neighbour, subjected the Roman to death.

\* Terminus was among their gods.

† Assemblies of the people on days designated for fairs, and on subjects other than those of trade, were not lawful.

‡ The Appian way, yet remains the wonder and reproach of modern times.

tion ; and the charms of conversation, and the sweets of refreshment, are then the substitutes for toil and care.

But the time thus spent is not lost, because they attend strictly to the advice of the sacred moralist, and make it up by the fidelity of their morning and evening labours in the field, the workshop or the counting-room. Besides the earth is there more prolific than in colder climes, like ours, and to less labour yields a greater supply, a more abundant harvest.

But abundantly as the earth yields her products, beneath an oriental sky, still it was there that man was first taught by his Maker, that she would not yield them without the sweat of the human brow. Implicit obedience was the first law given to our progenitors in Eden, as the condition of enjoying life without labour, of being surrounded by the perpetual verdure of spring, and regaled by the never-dying fragrance of its odours : But this fair condition violated, and they were doomed to know, that fruitful as the earth had come from the hands of its Creator, they should cultivate it with toil, and care, and anxiety, before it should yield them the means of enjoyment and subsistence. But for one fatal mistake, they would never have been called upon to sow their seed in the morning, and at evening to watch over it with a careful hand.

We have seen then, that the first Plough Boys were obliged to work early and late ; and their successors in the same climes, are still subjected to the same diurnal labour.

But the American Plough Boy enjoys a milder clime, and may perhaps think himself less obliged to rise with the dawn of day, or pursue his labours with the declining sun. He may perhaps flatter himself that the morning may be spent at a neighbouring bar-room, and the evening at a shooting-match or a horse-race, and the day still afford time enough for all the labour that he may have to perform. But this is, indeed, an error the most

fatal to his present, as well as future happiness. The mid-day beams of the sun are not so fierce on the hills or vales of America, as on the plains of Asia, where our first parents were doomed to earn their bread by the sweat of their brow. But they are still fierce enough to make the PLOUGH Boy feel their enervating effects, and to impress upon his physical as well as mental frame the necessity and importance of *sowing his seed in the morning*, and of extending to it the *vigilance of his hand in the evening*.

If our American Plough Boys would, one and all, adopt with energy and perseverance this injunction of oriental wisdom, how different would be the face of our country, in many places, from what it now is ! How many orchards would be planted ; how many fruit trees, of every kind, would be seen growing in beauty and luxuriance, where now the eye of the traveller, or sojourner, is obliged to rest upon nought but wilds and weeds ? How many fields would be ploughed and sown, and cultivated with success, which now lie waste, and barren as the deserts of Arabia. How many cattle, and domestic animals of every description, fit for the use of man, would be seen thriving and healthy, awaiting a profitable market, where now there are none, or those whose sickly and squalid appearance, bespeaks the indolence and neglect of their owners ! How many substantial rail fences would be erected, where there is now scarcely a brush bulwark against the encroachments of man or beast ? How many neat stone walls would take the place of rail fences, and remain as lasting monuments of the virtue of their owners—for *industry* and *virtue* are synonymous in agricultural life ! How many ditches would be seen running through our swamps, and yielding or restoring to wholesome vegetation, those nurseries of wild, unprofitable, and poisonous plants ; whose dark, damp shades are not only lost to agriculture ; but send forth daily



their pestilential vapours, spreading disease and death among the Plough Boys!

It is not the industrious Plough Boy who will feel the application of these remarks. He will take care that his fields and his fences, his flourishing fruit-trees, his overflowing cribs and barns, and his fat cattle, plump and smooth as a turtle-fed alderman, shall prove to the world that he never fails to attend to the admonition of our motto.

But it is to the slothful that this short essay is addressed. Pluck up the weeds, and the useful plants will take care of themselves. Reform the indolent, and the industrious will find a new spur to exertion. Ye careless and slothful Plough Boys, then, be advised by a friend. Cast off the sin of idleness, which so easily besets you, and imitate your industrious neighbours. Resolve for the future, *in the morning to sow your seed, and in the evening to withhold not your hand*; and you will soon find, that the blessings of Heaven await those who deserve them; and that health, prosperity, and a quiet conscience, are the never-failing rewards of virtuous industry. H. H. Jr. [Plough Boy.

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### Mr. Nicholson's Prize Essay.

#### *On a Rotation of Crops, and the most profitable mode of collecting, preserving, and applying Manures.*

(Communicated to the Albany County Agricultural Society.)

Some soils are peculiarly adapted for the growth of particular plants, and in such case many successive yearly growths of them may be raised, without manure, and without material diminution of product. We have known an instance of 14 good crops of wheat raised successively on the same ground; another of 18 crops

of oats; others of at least 10 of barley, and nearly of 20 rye: But these were peculiar soils; and although this sameness of culture was found successful, no inference is therefore to be drawn that it was the most profitable, or that such soils would not eventually tire of their favourite crops, and then be found exhausted and unfit for others. Generally speaking, we conceive that one of the most important points in husbandry is a judicious rotation of such crops as are most profitable for culture, and at the same time best adapted for the particular soils which are to be cultivated. Lands seem naturally to require a change of growths. Where the oak has disappeared, after it had lifted its head to the springs of ages, another oak will not naturally rise, but some other tree. Instances have been known of lands covered solely with trees of deciduous growth, where the knots of the pitch pine were still to be found; a proof that pine was once a tenant of the soil. In the southern states, where lands have been exhausted with injudicious cropping, and then thrown out to common, they soon become covered with growths of trees different from those they originally bore. Some plants are so unfit for long continuance in any particular place that they are endowed with migratory powers, either by their winged seeds, which are wafted abroad by the winds; by their roots, by which they change their places of growth beneath the surface; or by their vines, by which they travel above ground, and thus locate themselves in different situations. Of the first description are the varieties of the thistle, the milk-weed, and the fire-weed; of the second, the potato and some other bulbous rooted plants; of the third, the straw-berry, the black-berry, the different species of the gourd tribe. The stalks of erect plants fall when they ripen, and thus the seed reaches the ground at a distance from the roots which produced

them. There seems, indeed, to be generally a disposition in the earth to require changes in the plants it nourishes, in order that it may impart the food that is best adapted for each; and Providence, in his infinite wisdom, has endowed these while growing in a state of nature, with such properties as are best calculated to effect the changes. Let the cultivator, therefore, study nature, and follow her dictates, if he wishes either success or applause in his employment.

In regard to changes of crops, a general rule has been recommended of alternate growths of leguminous and culmiferous kinds, and of green crops and grain crops; but perhaps it would be quite as philosophical to insist upon alternate growths of fibrous, and tap-rooted plants; the former deriving their food from the surface of the earth, the latter from greater depths. But the value of crops, and the expense of raising each, should be duly estimated in making selections for rotations. Let us say, for instance, that the average crops of wheat, barley, and Indian corn, at their greatest extent, may average 50 dollars in value to the acre, after the grain is ready for market; crops of rye, oats and peas, not more than two thirds of this amount; buck-wheat, considerably less. From lands suitable for ruta бага, or mangel wurzel, it would seem that from five to six hundred bushels to the acre may be expected with good culture; which at 18 cents per bushel, a price certainly not beyond the proportionate value we have just given to the grain crops, will average about a hundred dollars to the value of an acre. The entire expense of either of these crops of roots, when ready for use, is not essentially greater than the expense incurred in producing grain crops; of course, it must be evident that these afford from 30 to 50 dollars an acre less of clear profit than a crop of either of the roots first mentioned. With a proper ap-

plication of the requisite quantity of manure to ruta бага, it may be successfully grown on almost any dry soil, when well and deeply mellowed, from the sandy to the deep rich loams. Soils of the latter description are best adapted for mangel wurzel. Either of these roots, when steam boiled, and especially with the addition of some meal, will answer all the purposes for which grain is used for feeding cattle of all sorts, from the horse down to the hog. Even stage horses, which, from the severity of their labour, require the most nourishing food, have been kept in England on hay and steam-boiled ruta бага. Mr. Cobbett says, "a hog of a good sort may be sufficiently fattened with this root when steam-boiled." Allowing, what we believe can hardly be admitted, that a bushel of oats contains as much nutriment as three of this root, still it is evident that the usual product of one acre of it will go as far in keeping horses as four of oats. Neither of these root crops require any considerable expenditure in seed, and on this account, if on no other, they are preferable to crops of the potato and of the Jerusalem artichoke, which in the article of seed are perhaps the most expensive of any whatever. We however consider crops even of these roots more profitable than those of grain, and particularly the potato, when judiciously cultivated in climates most suitable for its growth. For the various uses of this root for culinary purposes it stands indeed without a rival. In point of profit we would also give to the carrot, the parsnip, and the onion, a preference to crops of grain; but the soils well adapted for them is more limited, and their culture is more expensive; and although they should form a part of the products of the farm we cannot recommend them as being in all instances proper for a judicious rotation of crops. The common turnip, and the cabbage, are also entitled to atten-

tion. The pumpkin is as nutritious as the same weight of any root or vegetable whatever, and its culture is cheap; but whether its product, in weight, can be made to compete with that of roots, is a matter of which we are not informed. If 15 tons to the acre could be usually obtained of this species of gourd, we should be induced to pronounce the crop, in point of profit and use, unrivalled as a preparative for a crop of winter grain. The crop would be found among those which are least expensive in seed, in culture and in gathering; none would occasion less exhaustion of soil, nor require less for manure, as a little gypsum to the hills, or drills, will be found to have a powerful effect on its growth, but of its more complete cultivation we shall presently speak.

In Pennsylvania, and farther to the south, a successful mode of culture has been put in practice of growing Indian corn and potatoes in alternate rows or drills, and in this way about a sixth more of product in the aggregate, is obtained from the ground, than if these two sorts of crops were cultivated separately. Such is found to be the fact, and the reason for it seems to be that each crop has, in this way, more space given for the extension of its roots in search of its favourite food, and each has the like room above ground for deriving from the air the nutriment that is most suitable. Corn, in particular, it is well known, is liable to much injury, if planted too closely. There is, indeed, a variety of cases where this mingling of growths is found very advantageous, and whenever we shall venture to recommend the practice, it will be founded on a conviction of its utility. There are also some instances, even in this northern latitude, in which two crops may be had in a season from the same ground, and any case where it may be advisable shall be duly noted.

It should farther be observed that

in suggesting what may be deemed the most suitable changes of crops, no reference will be had to the actual state of farming among us, but merely what the state of farming ought to be; and in pursuance of this course, we shall, in a great measure, discard the idea, too long prevalent in this country, that we should make the most of our labour, not the most of our land; we shall, on the contrary, insist that, generally speaking, making the most of our lands, under a proper course of husbandry, is the right way to realize the most from our labour. We shall therefore begin with the most usual soil of this country, the dry, arable lands, which are usually suited for a variety of crops. Of the stiff clays, the hard gravels, and light sands, soils which abound but little here, we shall speak in particular. In ploughing we shall advise that the usual depth be about six inches, or about a third deeper than our farmers commonly plough: but that the depth should sometimes be greater than this, and sometimes less. We shall also insist on the ploughing being done in the most perfect manner, and not in the slight way too often practised; and we shall farther premise that the plan of culture we recommend is necessarily connected with the business of the dairy, to greater or less extent, and with that of the grazier, in feeding and fattening cattle of every description. Such we conceive to be the only true and profitable course to conduct farming in this country, but deviations from this may in some cases be found equally profitable. In general, however, we advise to this course of farming, for in this way the greatest quantity of manure is afforded, and for most lands manure is essential for obtaining the greatest crops, and of course for realizing the greatest profits.

We shall begin with the ground in wheat or rye stubble, as at the end of our course we propose to leave it.



Let the stubble ground be well turned over in the fall, to the depth of, say, six inches. It should not be turned over until a sward of white clover has covered the ground, which is to be produced by giving it a top-dressing of gypsum, in the spring. Under the subject of manures the reasons for this will be explained, when treating of gypsum. In the spring give the ground one or two ploughings more, as the nature of the soil may require, and of the same depth, and let the last ploughing be just before the proper time for planting Indian corn; for this crop, with an intermixture of other plants, is what we propose to begin with. Say, for instance, that the intermixture shall consist of the potato, of the pumpkin, and of the common pumpkin, a third part of each. We propose planting these crops in drills, in preference to hills, from a well founded conviction that in the former method considerably more may be obtained from the ground. Let furrows be run, at a good depth, for the drills, at the distance of about every three and a half feet. In these furrows lay off the shortest and best of the fresh barn dung, at the rate of about 20 wagon loads to the acre. For the drills intended for potatoes the longer sort of barn dung is as good as any other. If the different sorts of barn dung can be applied to the soils most suitable for each, as is mentioned in speaking of manures; this should always be attended to; that is, sheep and horse dung for the moister parts of the land, and cow dung for the drier. As fast as the dung is laid, it should be well covered, by a furrow, moderately deep, thrown over it from each side; but where potatoes are to form the alternate drills, let the seed for these be laid on the dung, previous to covering; and for this purpose, let the potatoes be cut in halves, lengthways, so as to give each about an equal number of eyes, and then wet them and roll them in gypsum before

laying them down, which should be at the distances of about 15 inches. The potato drills being thus covered, by the furrows thrown from each side, the same process serves to cover the dung in the other furrows, and thus the beds are formed for planting the other crops in the drill method. Indian corn may be drilled in at one operation by a drill machine for the purpose; the same may be observed of the turnip crop, and probably of the pumpkin; but though attended with more labour, it may usually be expected that they will be drilled in by manual operation. We should advise that the seed in the turnip drills be liberally strewn, in order that if part of the plants be destroyed by the flies, enough may still be left. The corn and pumpkin seed may be dropped at the distances of six inches, and thinned at the first hoeing, so as to have the growing plants of the former about a foot apart, and the latter about 16 inches. If any vacant places should happen in any of these drills, such vacancies may readily be supplied by transplanting sets, taken from parts where more plants are standing than are necessary. Any young plants may be transplanted after they have attained a suitable size, which is usually in from two to four weeks growth. The vacancies may be quickly filled by transplanting, and it is a matter well worthy of attention.

The practice, lately introduced, of laying barn dung at a good depth, and then covering it with mould to the depth of about three or four inches, and planting the seeds over the manure thus covered, seems to answer the best purpose for every drilled crop except potatoes, and we would therefore recommend this method of using barn dung in preference to every other, as far as it may be wanted for drilled crops. In this way this manure may be profitably applied while fresh; but in many instances we consider it more efficacious when applied after the process of rotting or



fermentation has commenced. Such is the theory of Sir Humphrey Davy, and we have full confidence in its correctness. When thus buried in the earth, the growing plants, placed above the manure, have the utmost means of absorbing all its gaseous and soluble parts, while the process of its decomposition is going on.

In preparing seeds we would, as a general rule, advise to their being soaked about 12 hours in a strong solution of saltpetre, or of common salt, and then rolled in gypsum before being committed to the earth. The effect of this mode of preparing the seed seems to be, that the young plants start with more vigour, and grow larger than they do where this treatment of the seed is neglected; and the solution of saltpetre has the further effect of bringing plants to maturity from one to two weeks sooner than they otherwise would ripen.

In selecting seed for the corn crop, take such stalks as bear two ears, and select the best ear from each of such stalks, the grains on each end to be rejected. In all cases where it is practicable, the seeds should be taken from the largest and most perfect plants, or roots, as the case may be. By attending to this mode of selecting seed the product of the corn crop in particular will soon be found greatly augmented; a discovery, the honour of which is due to Mr. Cooper, of New Jersey. It is said that sprinkling a little gypsum on the silk of the ears of corn, will make them fill to the ends. Nipping off the blossoms of the potato crop, as fast as they appear, is found, by accurate experiment, to increase the growth of the roots about one sixth part. Salt and gypsum have each a powerful effect on their growth, though by applying too much of the latter it may cause them to run too much to vines. To the corn and pumpkin crop apply some of this latter manure after the plants are up. What effect it has

on turnips we have never understood.

In ploughing between the drills let it be to a good depth, first turning the furrows from the plants, running about four inches from them, and then turning the furrows back, when the hoeing and hand weeding are to follow. The second ploughing should be similar to the first, but farther from the plants; and in general, we believe, it will be found advantageous to plough and hoe the crops the third time. We have seen it highly recommended to plough among Indian corn as late as in August. Frequent deep ploughing is certainly the best means of keeping the ground moist, and should never be omitted in case of drought. Ground that has become quite dry will be found moist after a thorough deep ploughing. At all events, the ground should be so cultivated as to prevent any weeds from going to seed in the fall, for if this be suffered, the ground will remain constantly stocked with the seeds of weeds.

We advise to the cultivation of the common turnip, the potato, and the pumpkin, in the manner we have mentioned, for the purpose of affording the early supply of food for feeding and fattening cattle in the fall and the forepart of the winter, before the ruta бага crop should be used, of which we shall presently speak. We also advise to this variety of crops, in order that the cattle may have a greater variety of food, a matter of considerable importance in feeding and fattening cattle. For this purpose also the culture of the cabbage is worthy of attention. Horses, and all sorts of cattle, fatten well on pumpkins, but for swine they should be steam boiled, and the seeds taken out, as these prove injurious to those animals, by causing too great a secretion of urine. The seeds afford an oil equal to that of the olive, and are well worth preserving for this purpose.

As soon as the ears of the corn crop have somewhat hardened, the

crop may be cut up and set in shocks, with the tops tied closely together to keep out the rains, in which way the grain will harden as well as in any other, and a great addition of fodder may thus be acquired.

During the next season we propose to take two crops from the ground, to wit, a crop of ruta бага, preceded by such spring crop as ripens sufficiently early to be harvested in time for preparing the ground for a full growth of this root. In the meridian of New York, Mr. Cobbett says that from the 26th of July until some of the first days in August, is the proper time to transplant this crop, the plants for the purpose being previously grown. The method of cultivating the crop by transplanting, he insists, is the preferable way, and from our own experience we are fully disposed to agree with him. Advancing to the northward, from New York, the seasons are shorter, and of course the crop should be transplanted earlier, while at the same time the spring crops are later in ripening. At New York, barley could be taken from the ground in time sufficient for preparing for ruta бага; farther to the north this could not be the case. In the more northerly parts of this state, it would, perhaps, be difficult to find any crop, now raised in this country, with the exception of flax, that would be sufficiently early. The fact is, we want a particular crop for this purpose; and that would seem to be the new sort of spring wheat lately introduced into France, which is there called *le ble de Mai*, in English, the wheat of May. It is said to be a very productive species of wheat, affording a grain from which flour is made of about a medium whiteness between that of rye and wheat, and in that country it is fit to harvest in the latter end of May. In this state it would probably ripen nowhere later than the first of July, which would be in time sufficient for the crop of ruta бага. Until we can

procure this wheat, we can only recommend that the preceding crop be such only as will ripen sufficiently early, and where none can be had for the purpose, to be content with raising the crop of ruta бага only in the course of the season. Where previous spring crops can however be obtained, let them be taken from the ground as quick as possible, and the ground deeply turned over, and mellowed by three deep ploughings, then furrowed at the distances of about 30 inches, the manure laid in, and covered by furrows thrown over it from each side, and the plants of ruta бага immediately set on the ridges, by transplanting, at the distance of about a foot from each other. From our own experience we are fully convinced that the plan of transplanting is, in the end, much the cheapest, and most advisable. We would, however, recommend not to transplant before the appearance of a heavy shower, but at any time afterwards; that the plants be of good size, say of five or six weeks growth, and that in setting, special care be taken to have the lower parts of the roots well enclosed with earth. For further particulars in regard to the culture of this crop, the time and manner of using it, and of saving it, we refer the reader to Mr. Cobbett's book on the subject, from a conviction that it is the best essay that has ever been published on the culture and use of this valuable plant.

It will be seen, however, that we differ from Mr. C. in the distances in which the plants are to be set, and in the manner of forming the ridges. He forms his ridges by four gathering furrows, by which the ridges are each about 4 feet in breadth. We propose to form the ridges by two gathering furrows, and at the distances of 30 inches. In England, the plan we recommend is generally pursued, and the ridges are usually but 27 inches wide.

(To be continued.)

FROM NILES' WEEKLY REGISTER.

*Cotton, Rice, Tobacco, Sugar, Wine.*

The National Intelligencer informs us that in New York 133 bushels of Indian corn have been gathered this year from *one acre*; and 714 bushels of potatoes from one acre. This has led to the following statistical facts.

**COTTON.**—In 1817 the export of cotton from the United States was (85,649,328*lbs.*) more than eighty-five million. One acre yields, at a moderate estimate, 250*lbs.* of clean cotton. The whole export, therefore, is the product of only 535 square miles: this is less than the 108th part of Georgia, and less than the 520th part of the cotton regions of the U. States.

**RICE.**—The maximum export of rice was 73,329 tierces, (in 1790,) or (43,997,400*lbs.*) nearly forty-four million pounds. This, on an average crop, is the produce of only sixty-five square miles, which is less than the 440th part of South Carolina, and less than two-thirds of the District of Columbia.

**TOBACCO.**—The maximum export of tobacco was 12,428 hogsheads, in 1791. A hogshead is about one thousand weight; and, on average, one acre will yield one hogshead. The export, therefore, was the product of about 176 square miles, which is less than the 363d part of Virginia. Each of the 97 counties of that state contains, on an average, more than 659 square miles, viz: more than three times the quantity of land which furnished the above export.

**SUGAR.**—Such is, generally, the fertility of the equinoctial regions of America, that all the sugar consumed in France, estimated at twenty million kilogrammes, (about 54,000,000 pounds,) may be produced on an extent of 7 square leagues, which is not equal to one-thirtieth part of the smallest department of France.

**WINE.**—About 1,600,000 arpents, or 1,350,400 acres, are in France em-

ployed in the culture of the vine. The value of the annual product is about 100,800,000 dollars, at about twenty cents a gallon. In 1790 Bordeaux alone exported more than fifteen million gallons of wine. The 1,600,000 arpents are less than one 80th part of France, and less than one 20th part of Pennsylvania.

The value of the annual produce of these five interesting articles, may be thus estimated:

Cotton, at 15 cents,	\$12,847,399
Rice, \$20 a tierce,	1,466,580
Tobacco, \$60 a hogshead	6,745,680
Wine, 20 cents a gallon,	100,800,000
Sugar consumed in France,	
at 10 cents a pound,	5,400,000
	<hr/>
	\$127,259,659

For the product of these articles the following quantities of land are cultivated, viz.

	Square miles.
For cotton	555
rice	65
tobacco	176
sugar	63
wine	2110
	<hr/>
	2969

This is little less than three-fourths of the state of Connecticut.

The authority for cotton, rice, and tobacco, is Seybert's Statistical Annals, and the personal information of gentlemen of experience in the culture of those articles.

For sugar I have the authority of Humboldt's *Essai Politique*.

For wine I depend on Chaptal: his "Treatise, theoretical and practical, on the culture of the vine, and the art of making wine, brandy, spirits of wine, and vinegars, simple and compound," is a truly classic work, in which he had the aid of Rozier, Parmentier, and Dussieux. It contains all that the chemist, or botanist, or vine cultivator, or enlightened statesman can reasonably ask or

wish to know. It is in two octavo volumes, of about 500 pages each, with 21 plates.

This admirable treatise should be translated for the use of our fellow citizens who occupy our wine-yielding regions. For, in a few years, the United States will produce wine for their domestic consumption and exportation.

A revolution of our planet on its axis would present to the eye of an observer, at the distance of a few thousand miles, a few spots or specks (China or Holland) fully cultivated. The rest would be as a desert. Pauperism in England, now so extensive and so dangerous, is fulfilling the prophecies of Goldsmith's Deserted Village.

"Political economy (says Jean Baptiste Say,) is founded on statistical knowledge, or (what is the same thing) history;" and that "the American confederacy will have the glory of proving that the loftiest policy is in accordance with moderation and humanity."

The most active mind has not yet conceived an adequate idea of the vast resources of the United States.

*Washington City.*

NOTES AND REMARKS—BY THE EDITOR OF THE REGISTER.

The *general* average value of the products of the United States exported, may be estimated as amounting to 45,000,000 dollars, at fair prices; the cotton, tobacco, and rice, included in which, may be valued at 21,000,000—the balance is made up of bread stuffs and meats, the product of the forest and of the sea, and 2,000,000 in manufactures.

The chief things that we have for *export* bear about the following proportions to their respective quantities *consumed* in the United States—assuming 45 millions as the amount of value exported, and taking our products at their average quantities.

	Val. or am't exported.	Val. or am't consumed.
Bread stuffs, meats & drinks, D.	13,500,000	270,000,000
Provender for horses, &c. (say)	50,000	60,000,000
Manufactures, (in general)	2,000,000	220,000,000
Product of the fisheries	1,500,000	9,000,000
forest	6,000,000	60,000,000
Cotton, - - - - - lbs.	85,000,000	40,000,000
Tobacco, - - - - - hhds.	75,000	25,000
Rice, - - - - - tierces	80,000	80,000

The value of the cotton, tobacco, and rice consumed in the United States, being considered as included in the aggregate values of the manufactures used, or other stuffs consumed, will give a value to the consumption equal to 619, say 620 millions of dollars per annum; and assuming our population at 9,500,000, the average for each individual is 65 dollars a-year. This amount includes ALL sorts of disbursements needful to the subsistence, convenience and comfort of the people, except the product of the value of labour directly applied to the *erection* of buildings or other permanent works. The amount, though it appears enormous, I am satisfied is less than the actual value consumed. It brings out the general result, that our exports stand to our consumption as 45 is to 620—or as *one* is to *fourteen*, at the present time. When the price of commodities was higher, the rate was as *one* to *seventeen*.

The ratio of each of the preceding items are about as follows:

	Exported.	Consumed.
Bread stuffs, meats & drinks, as 1 is to	1	21
Provender, - - - - -	1	1,200
Manufactured articles, - - -	1	110
Product of the fisheries, - - -	1	6
forest, - - -	1	10
Cotton, - - - - -	2	1 (nearly.)
Tobacco, - - - - -	3	1
Rice, - - - - -	1	1

It would be excessively tedious to attempt to detail the multitude of items that affect these general conclusions. Accuracy is not pretended in either of them. Probabilities only are aimed at.

From these facts assumed as being pretty near the truth, we may estimate the importance of the home trade, or internal commerce and consumption of the people, and arrive



at a multitude of highly interesting considerations. Take the following for an example :

The sudden introduction of less than 500,000 persons, would leave us no surplus of *present* products of food for men. But it is a demand for this surplus, no matter how created, that assesses the value of the whole product. Such products, let the fact be recollected, were at as high prices during the late war, when there was very little export of them, as they are now, the difference in the value of our circulating medium being also considered. This was caused by a partial want of agricultural labourers ; but more by the waste of provisions that belong to a belligerent state.

Foreign commerce, nevertheless, has a powerful bearing on the consideration of value in a state of peace, to the growers of grain, meats, &c. The amount beyond their own *immediate* consumption and that of their families, may be about two fifths of the whole, besides the foreign export, or nearly 110 millions,—the *price* of which is fixed by the small amount of 13,500,000 dollars' worth sent abroad ! And, this little surplus remaining unconsumed, or without being wasted, at home, would depreciate the general value of the whole surplus at least 50 per cent. Hence, it would seem of greater interest to the farmers even to *destroy* a portion of their products, than to *lost* them into a glutted market, according to the principles acted upon by the Dutch in regard to spices. A policy not to be recommended on the score of morality, but as according with the spirit of trade. It cannot, therefore, be advantageous to the agriculturist to depend upon a foreign market to assess the value of his articles, for it is, and ever must be uncertain and unsteady. It is his interest to have a market at home, for this may be depended upon, and the product will be regulated by

the demand, so as to leave a fair profit.

A gentleman of observation, on a certain occasion, when I was speaking on this subject, related the following case in point.

At an interval of about 10 years, he had stopped for a short time at a certain village in Connecticut—when first there, it contained two first rate taverns, and one other respectable establishment of the same kind. Two lines of stages made it their halting place every night, and all seemed flourishing and lively. When there again, the three taverns were shut up, or at least not occupied as such, and he had to apply at a private house to be accommodated during his stay, and every thing appeared dull and desolate. He asked the reason.—It was the establishment of steam-boats which had destroyed the lines of stages, and driven off the persons and horses that they had given employment to, and of course the market they created, which hitherto took off all the surplus products of the neighbourhood, had ceased to be. A thousand instances of this sort might be noted to prove that a *ready market* is the prosperity of a neighbourhood, country, state, or nation.

On the different items, especially those of *cotton* and *sugar*, as mentioned by the writer in the National Intelligencer, we intend to speak particularly hereafter, in the essays we have promised to write under the head of " Political Economics," the introduction to which appeared in the Register of the 13th ult. page 162.

### Vine Dressing near Vevay.

VEVAY, (Indiana) Oct. 28.

The season for making wine is just over ; and notwithstanding the uncommon dry season, the vine dressers near Vevay have made four thousand eight hundred and ninety-two gallons.

[We copy the following from Niles' Weekly Register, with an intention, as his proposed essays appear, of giving them a place in the *Rural Magazine*,—having no doubt, from our knowledge of the editor, but they will be instructive as well as interesting to our readers.—*Ed.*]

### Political Economics.

#### INTRODUCTORY.

Though so much has been said on political economy as applicable to the national prosperity, by profits derived from national industry, that we despair of offering any new thing on the subject, we have so far yielded to the wishes of many friends as to resolve upon the publication of a new series of essays, to elucidate some of the facts that belong to this deeply interesting concern—a concern that presses itself into every man's business, which invades our fire-sides and accompanies us to our bed-chambers: yet, so beset with it, and feeling it in all that we have to sell or want to buy, and in whatsoever business we do that requires the aid of money or use of credit—still we shrink from the trouble of ascertaining its operation and extent. The mind, by repeated mortifications and disappointments, loses its tone; and we seem rather disposed to trust to the chapter of accidents for redress, than rouse ourselves to an exertion to put an end to our wrongs, through the means afforded; forgetting that effects flow from causes.

It has pleased Providence to bless us with a "goodly land," and we are favoured with the best system of government ever devised—but the seat of ancient Paradise is a howling waste, and Greece and Rome are tenanted by slaves.

A nation's prosperity is the happiness of the individuals composing it. The freeman cannot be a happy man, unless private industry secures private independence; and freedom it-

self must pass into despotism. The power of a government rests in the moral and physical force of the governed, and its wealth is constituted by personal acquisitions of property. Governments were made for the good of the people, not the people for governments; and their object fails when private happiness ceases to be respected. Emancipation from political tyranny, without the means of preserving personal liberty, is a nullity. The gift of life without the means of living, is destitute of value.

Production is the only source of national wealth that can be depended upon. The home market, even to the most commercial nations, is of many times the amount of the foreign one. The former is not easily effected, except by a self-mistaken policy; but the latter is as capricious as the winds, and beyond our control. Speculation does not create value—the purchase and sale of a million's worth of goods does not improve their quality or add to their quantity, to the amount of a cent. A change of commodities between different countries, may increase their value to the extent of the labour expended in transporting them; and it is generally convenient, if not advantageous, when exchanges are made on equal terms. But poverty must be the lot of every society which barters the labour of two or more of its members for that of one person in another society.

Employment is the best preservative of health and morals. Things should be so that every person willing to labour for his living, should find labour to do, and live plentifully. If it is otherwise, an error has been committed that ought to be corrected immediately, for it is pregnant with the greatest evils. It is the chief check to population, and more powerful than the sword to destroy the liberties of nations. Nations and individuals are spendthrifts of the worst description when they purchase

that which they can make from the spare labour at home. Who will give away a hundred dollars and their interest for ever, for the sake of receiving twenty dollars of his own money as a premium? Yet thus a nation acts when, for the sake of the duties on imports, it accepts of another nation any commodity which it might supply itself with, without detriment to its other branches of industry.

Agriculture is the noblest and best occupation of man; and in a country like the United States, where land is plenty and labour scarce, it will always be pushed to the extent which a profitable market demands. Yet if none worked but those who laboured in the field, society could not exist long. We should perish with cold and hunger. It is by an association of the arts that we live—and our comfort materially depends on their respective perfections. Only about one fifth of a population are fitted for agricultural labours, in general. The other four fifths, if idle would consume the whole amount of value produced, and send the labourers supperless to bed. It is the capacity of production in the most numerous body that must be brought into action, if families and nations would prosper and be happy. If they purchase any thing which their lost time might be applied to the fabrication of—they might as well throw its cost into the sea.

In the course of our essays, which we expect to commence in two or three weeks, we shall endeavour to point out some of the chief things that require the protection of government, just as those of a well regulated family are managed; and shew that the well being of a nation depends upon a fair exchange of labour for labour, substantial for substantial, and even luxuries for luxuries. The man who exchanges wheat for *ear-rings*, unless those rings are manufactured in his country, wastes

to the country the whole amount of the *intrinsic* value of the wheat over that of the *ear-rings*, which latter is only that of the metal composing them. A nation cannot be independent, if it looks to another for necessities—it cannot be rich, if it exchanges necessities for luxuries. And luxuries, especially, should not be received at all, unless things of the same class are remitted in payment for them. The effect of these on population and manners, will also be considered, and illustrated by many statistical facts—as leisure is allowed to arrange them.

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FROM HUMBOLDT'S PERSONAL NARRATIVE.

### *The Coffee Plant.*

The coffee tree flowers only the second year, and the flowering lasts only twenty-four hours. At this time the shrub has a charming aspect; seen from afar, it seems covered with snow. The produce of the third year becomes very abundant. In plantations well weeded and watered, and recently cultivated, we find trees bearing sixteen, eighteen, and even twenty pounds of coffee. In general, however, a produce of more than a pound and a half or two pounds cannot be expected from each plant; and even this is superior to the mean produce of the West India Islands. Rains at the time of the flowering, the want of water for artificial irrigations, and a pestilential plant, a new species of *coranthus*, which clings to the branches, are extremely injurious to the coffee trees.

### *Sugar Cane.*

Three species of sugar cane can be distinguished even at a distance, by the colour of their leaves; the ancient Creole sugar cane, the Otaheite cane, and the Batavia cane. The first has a leaf of a deeper green, the stem less thick, and the knots

nearer together.—This sugar cane was the first introduced from India into Sicily, the Canary Islands and the West Indies. The second is of a lighter green; and its stem is higher, thicker, and more succulent. The whole plant displays a more luxuriant vegetation. We owe this plant to the voyages of Bougainville, Cook, and Bligh. Bougainville carried it to the Isle of France, whence it passed to Cayenne, Martinique, and since 1792, to the rest of the West India Islands. The sugar cane of Otaheite, the *To* of those islanders, is one of the most important acquisitions, for which colonial agriculture is indebted to the travels of naturalists. It yields not only one third more of juice than the Creolian cane on the same space of land; but from the thickness of its stem, and the tenacity of its ligneous fibres, it furnishes much more fuel. The last advantage is important to the West Indies, where the destruction of the forests has for a long time obliged the planters to use the canes deprived of their juice, to keep up the fire under their boilers.

But from the knowledge of this new plant, the progress of agriculture on the continent of Spanish America, and the introduction of the East India and Java sugars, the revolutions of St. Domingo, and the destruction of the great sugar plantations of that island, would have had a more sensible effect on the prices of colonial produce in Europe. The Otaheite sugar cane was carried from the Isle of Trinidad to Caraccas. From Caraccas it passed to Cicuta and San Gil in the kingdom of New Grenada. In our days its cultivation during twenty-five years almost entirely removed the apprehension, which was at first entirely entertained, that, transplanted to America, the plant would by degrees degenerate, and become as slender as the Creole cane. If it be a variety, it is a very constant one. The third spe-

cies, the violet sugar cane, called *Can-a de Batavia*, or *de Guinea*, is entirely indigenous in the island of Java, where it is cultivated in preference in the districts of Jupara and Pasuruan. Its foliage is purple, and very broad; and it is preferred in the province of Caraccas for rum. The *tablones*, or grounds planted with sugar canes, are divided by hedges of a colossal gramin; the latta, or gynesium with distich leaves.

### American Fig Tree.

The trunks of these trees are covered with very odoriferous plants of vanilla, which, in general, flower only in the month of April.—We were here again struck with those ligneous excrescences, which in the form of ridges, or ribs augment, in so extraordinary a manner, and as far as twenty feet above the ground, the thickness of the trunk of the fig trees of America. I found trees twenty-two feet and a half in diameter near the roots.—These ligneous ridges sometimes separate from the trunk at a height of eight feet, and are transformed into cylindrical roots two feet thick. The tree looks as if it were supported by buttresses. This scaffolding, however, does not penetrate very deep into the earth. The lateral roots wind at the surface of the ground, and when at twenty feet distance from the trunk, they are cut with the hatchet, we see the milky juice of the fig tree gush out, which, when deprived of the vital influence of the organs of the tree, is altered and coagulates. What a wonderful combination of cells and vessels exist in these vegetable masses; in these gigantic trees of the torrid zone, which, without interruption, perhaps during a thousand years, prepare nutritious fluids, raise them to the height of 180 feet, convey them down again to the ground, and conceal beneath a rough and hard bark, under the inanimate layers of ligneous matter, all the movements of organic life!



*The Cow Tree.*

“ Amid the great number of curious phenomena which have presented themselves to me in the course of my travels, I confess there are few that have so powerfully affected my imagination, as the aspect of the cow tree.

“ Whatever relates to milk, whatever regards corn, inspires an interest, which is not merely that of the physical knowledge of things, but is connected with another order of ideas and sentiments. We can scarcely conceive how the human race could exist without farinaceous substances, and without that nourishing juice which the breast of the mother contains, and which is appropriated to the long feebleness of the infant. The amylaceous matter of corn, the object of religious veneration among so many nations, ancient and modern, is diffused in the seeds and deposited in the roots of vegetables; milk, which serves us as an aliment, appears to us exclusively the produce of animal organization.—Such are the impressions we have received in our earliest infancy; such is also the source of that astonishment which seizes us at the aspect of the tree just described. It has not here the solemn shades of forests, the majestic course of rivers, the mountains wrapped in eternal frosts, that excite our emotion.—A few drops of vegetable juice recal to our minds all the powerfulness and fecundity of nature. On the barren flank of rock grows a tree with coriaceous and dry leaves. Its large woody roots can scarcely penetrate into the stone. For several months of the year not a single shower moistens its foliage. Its branches appear dead and dried; but when its trunk is pierced, there flows from it a sweet and nourishing milk. It is at the rising of the sun that this vegetable fountain is most abundant. The blacks and natives are then seen hastening from all quarters, furnish-

ed with large bowls to receive the milk, which grows yellow, and thickens at its surface. Some employ their bowls under the tree itself, others carry the juice home to their children. We seem to see the family of a shepherd, who distributes the milk to his flock.

“ I have described the sensation which the cow tree awakens in the mind of the traveller, at the first view. In examining the physical properties of animal and vegetable products, science displays them as closely linked together; but it strips them of what is marvellous, and perhaps also a part of their charms, of what excited our astonishment.—Nothing appears insulated; the chemical principles that were believed to be peculiar to animals are found in plants; a common chain links together all organic nature.”

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*Singular effect of Peruvian Bark.*

A French merchant, at Guayra, named Delpech, in 1806, had occasion to receive several travellers, inhabitants of those countries. The apartments destined for visitors being filled, and the number of his guests increasing, he was under the necessity of putting several of them in rooms occupied by *cinchona*. Each of them contained from 8 to 10 thousand pounds of that bark. One of his guests was ill of a very malignant fever. After the first day he found himself much better, though he had taken no medicine; but he was surrounded with an atmosphere of *cinchona* which appeared very agreeable to him. In a few days he felt himself quite recovered without any medical treatment whatever. This unexpected success led M. Delpech to make some other trials. Several persons, ill of fever, were placed successively in his magazine of *cinchona*, and they were all speedily cured, simply by the effluvia of the bark.

In the same place with the cinchona, he kept a bale of coffee, and some bottles of common French brandy. In some time M. Delpech, when visiting his magazine, observed one of the large bottles uncorked. He suspected at first the fidelity of a servant, and determined to examine the quality of the brandy. What was his astonishment to find it infinitely superior to what it had been!—A slightly aromatic taste added to its strength, and rendered it more tonic and more agreeable. Curious to know if the coffee had likewise changed its properties, he opened the bale, and roasted a portion of it. It was more bitter and left in the mouth a taste similar to that of the effluvia of bark.—The bark which produced these singular effects was fresh. Would the cinchona of commerce have the same efficacy?

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### *Oil of Pumpkin Seed.*

C. S. KAPINESQUE, Esq. to Doct. SAMUEL MITCHELL.

*New York, 20th Feb. 1819.*

While I was at Harmony, on the banks of the Wabash, in the state of Indiana, last summer, I was told by the industrious German Society of the Harmonites, that instead of throwing away or giving to the pigs the seeds of their pumpkins, as is usually done all over the country, they collected them and made an oil from them which they use for all the purposes of lamp oil and olive oil. It is well known, that all the different species and varieties of pumpkins (genus *cuburbita* Linnæus) afford an oil which has valuable medical properties, possessing in the highest degree the refrigerative quality; but I had never heard before of its being made on a large scale, and for economical uses.

It will be sufficient to mention this fact to some of our enlightened farmers, to induce them to imitate the worthy Harmonites, and I recommend

highly the practice, as likely to become eminently beneficial. The pumpkin seeds afford their oil with the greatest facility and abundance. One gallon of seeds will give about half a gallon of oil. They may be pressed like rape and flax seed.—Their oil is clear, limpid pale, scentless, and when used for salad instead of sweet oil, has merely a faint insipid taste; it burns well, and without smoke. Those advantages entitle it to our attention, as an indigenous production of first necessity. Pumpkins grow all over the United States, from Maine to Louisiana, and with such luxuriance, as to produce sometimes as much as 50,000 *lbs.* weight of fruits, and about 2000 *lbs.* weight of seeds, in one acre of Indian corn without injuring the crop of corn. Those 2000 *lbs.* of seeds might produce about 200 gallons of oil, worth about 200 dollars. I calculate that about two millions of gallons of such oil could be made annually in the United States, from the seeds that are wasted or given to cattle and pigs. This is worth saving—and in addition to the bread, pies, soups, dishes, feed, &c. afforded by pumpkins, we shall have a good and wholesome home-made vegetable oil for lamps and food.

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### *Disease among Horses.*

MIFFLINTOWN, (Penn) Nov. 20.

A disease prevails among the horses in this part of the country, by some called the Burnt Tongue. We understand that it originated in the western section of this state, and has extended along this route from Pittsburg to Philadelphia. It has in a few instances proved fatal: but we understand that the stages west of the Alleghany have been stopped, and numbers of wagonners are obliged to lie by in consequence of it. It affects the tongue and prevents the creature from eating, and is very catching, so much so, that it is said a beast will

take it in consequence of its having been hitched at the same place that the one has stood which was affected.

LANCASTER, (PENN.) NOV. 23.

The following method of practice and recipe for the cure of the prevailing disease among horses, called *sore mouth*, was obtained from Mr. Tomlinson, (one of the proprietors of the Western Mail Stages) on his return from visiting the sick horses in the line, and I am authorized to say, will, if strictly attended to, succeed in curing in 99 cases in 100—by inserting it you will oblige MANY.

RECIPE.

On the commencement of the disease, bleed moderately. If the blood, after cooling, appears to have much buff on it, repeat the bleeding; give a pint of castor oil; if it does not operate in 16 hours, give two thirds of a pint. Nitre may be given at the rate of 2 oz. a day, or salts two or three times a week;  $\frac{1}{4}$  lb. at a time. These may be given in a thin mash, or rather slop of bran, it being the best food for the animal while diseased.

Take half a pint of honey, one table spoonful of borax, and one quart of strong sage tea. Mix them well together; then take a stick and tie a soft rag to the end of it, dip it in the mixture, and wash the tongue, gums and mouth well; the more frequent the better, at least every two hours. Sweet milk in the tea will do no harm. or a little nitre may occasionally be put in it with good effect. Be particular in keeping the mouth clean and nursing the horse with care.

The pulse and appearance of the blood must govern as to the necessity of bleeding more than once.

*The Arabian Horse.*

This noble animal, which lately arrived in the ship Horatio, has been sold for *four thousand dollars*, to Messrs. Allison and Van Ranst, and has been conveyed to Long Island.

*Wild Horse of the West.*

The horse of the Columbia River will rank with the finest of his species in the known world. His size is fifteen or sixteen hands, even in a state of nature, unprovided with food or shelter by the hands of man. His form exhibits much bone and muscle, but not the mass of flesh which is found on the fat European horse.—His limbs are clean and slender; the neck arched and rising; the hoofs round and hard; and the nostrils wide and thin. He is equally distinguished for speed and bottom. He runs rapidly, and for a long time; rivaling, in this respect, all that we have heard of the English hunting horses. In other respects—in the docility of his nature, in his capacity to sustain hunger and hardship, in his powers to provide food for himself and his master, he is wholly unrivalled. He is readily trained to the business of his master's life, that of hunting, and pursues the game with all the keenness of the dog, and with equal sagacity and more success. He will run down the deer in the *prairies*, with or without his master on his back, and, when overtaken, will hold it with his teeth. When rode after game he needs no guiding of the bridle to direct him. He will pursue a drove of buffaloes, and, coming up with them, will stop one by biting him with his teeth. The animal bitten, immediately wheels to defend himself with his horns; the horse wheels at the same instant to avoid it; and at this moment, when the side of the buffalo is presented, the Indian lets fly an arrow, which often passes entirely through his body. The wounded animal always turns out of the drove to lay down and die. The horse and his rider pursue the gang to make fresh slaughter. Another horse trained to a second part of the game, with other Indians, take the trail of the wounded buffalo, which is butchered and carried into camp. These things seem incredi-



bel; but we have them upon the authority of Lewis and Clarke, and a great number of traders who have been upon the Columbia river since the time of their discovery; some of whom are now in this town.

The capacity of this horse to sustain fatigue, and to provide food for himself, is equally astonishing. He is galloped all day, sometimes 80 or 90 miles in the space of 10 or 12 hours, and is then left to shift for himself during the night. In the spring, summer and autumn, he finds no difficulty; the short and sweet grass of that country gives him an abundant and nutritious repast. In the winter, and towards the mountains, where the snow is several feet deep, his unerring instinct tells him where to search; he scrapes away the snow with his hoof till he comes to the ground, and rooting there with his nose, finds where-with of moss and grass to sustain his life. On the borders of creeks and rivers he feeds on the boughs of willows, and other soft wood, which his master has sometimes the kindness to fell for him with a hatchet.

This fine animal is found on the banks of the Columbia, in latitude 46, in the great plain which lies on the borders of this river, between the upper and lower range of mountains. His origin is traced to Mexico, thence to Spain, thence to the North of Africa, where the Arabian barb is found in all the perfection of his species. His fine form, his generous spirit, and his noble qualities, are preserved upon the Columbia river; and certainly it is worthy the experiment to endeavour to transplant him into other parts of the United States. Many citizens have attempted to do so; but have always been robbed by the Indians of the Rocky Mountains. Lewis and Clarke procured 73, said by Gov. Clark to be the most beautiful collection of horses that he has ever seen together before or since; but the whole number was stolen from them by Indians, who followed their trail,

and never ceased their operations until they had carried off the last.

[*St. Louis Inquirer.*]

#### JAMES WATT.

(Ascribed to an eminent writer.)

Death is still busy in our high places; and it is with great pain that we find ourselves called upon, so soon after the loss of Mr. Playfair, to record the decease of another of our illustrious countrymen, and one to whom mankind has been still more largely indebted. Mr. James Watt, the great improver of the steam-engine, died on the 25th ult. at his seat of Heathfield, near Birmingham, in the 84th year of his age.

This name, fortunately, needs no commemoration of ours; for he that bore it survived to see it crowned with undisputable and unenvied honours; and many generations will probably pass away before it shall have "gathered all its fame." We have said that Mr. Watt was the great *improver* of the steam-engine; but, in truth, as to all that is admirable in its structure, or vast in its utility, he should rather be described as its *inventor*. It was by his inventions that its action was so regulated as to make it capable of being applied to the finest and most delicate manufactures, and its power so increased as to set weight and solidity at defiance. By his admirable contrivances, it has become a thing stupendous alike for its force and its flexibility; for the prodigious power which it can exert, and the ease and precision, and ductility, with which they can be varied, distributed, and applied. The trunk of an elephant that can pick up a pin or rend an oak is nothing to it. It can engrave a seal, and crush masses of obdurate metal like wax before it, draw out, without breaking, a thread as fine as a gossamer, and lift up a ship of war like a bauble in the air. It can embroider muslin and forge anchors, cut steel into ribbands, and impel loaded ves-



sels against the fury of the winds and waves.

It would be difficult to estimate the value of the benefits which these inventions have conferred upon the country. There is no branch of industry that has not been indebted to them; and in all the most material, they have not only widened most magnificently the field of its exertions, but multiplied a thousand fold the amount of its productions. It is our improved steam-engine which now enables us to pay the interest of our debt, and to maintain the arduous struggle in which we are still engaged, with the skill and capital of countries less oppressed with taxation. But these are poor and narrow views of its importance. It has increased indefinitely the mass of human comforts and enjoyments, and rendered cheap and accessible all over the world the materials of wealth and prosperity. It has armed the feeble hand of man, in short, with a power to which no limits can be assigned, completed the dominion of mind over the most refractory qualities of matter, and laid a sure foundation for all those future miracles of mechanic power, which are to aid and reward the labours of after generations. It is to the genius of one man too that all this is mainly owing; and certainly no man ever before bestowed such a gift on his kind. The blessing is not only universal, but unbounded; and the fabled inventors of the plough and the loom, who were deified by the erring gratitude of their rude contemporaries, conferred less important benefits on mankind than the inventor of our present steam-engine.

This will be the fame of Watt with future generations; and it is sufficient for his race and his country. But to those to whom he more immediately belonged, who lived in his society and enjoyed his conversation, it is not, perhaps, the character in which he will be most frequently recalled—most deeply lamented—or even most highly

admired. Independently of his great attainments in mechanics, Mr. Watt was an extraordinary, and in many respects, a wonderful man. Perhaps no individual in his age possessed so much and such varied and exact information—had read so much, or remembered what he had read so accurately and so well. He had infinite quickness of apprehension, a prodigious memory, and a certain rectifying and methodising power of understanding, which extracted something precious out of all that was presented to it. His stores of miscellaneous knowledge were immense—and yet less astonishing than the command he had at all times over them. It seemed as if every subject that was casually started in conversation with him, had been that which he had been last occupied in studying and exhausting; such was the copiousness, the precision, and the admirable clearness of the information which he poured out upon it without effort or hesitation. Nor was this promptitude and compass of knowledge confined in any degree to the studies connected with his ordinary pursuits. That he should have been minutely and extensively skilled in chemistry and the arts, and in most of the branches of physical science, might perhaps have been conjectured; but it could not have been inferred from his usual occupations, and probably is not generally known, that he was curiously learned in many branches of antiquity, metaphysics, medicine, and etymology, and perfectly at home in all the details of architecture, music, and law. He was well acquainted too with most of the modern languages, and familiar with their most recent literature. Nor was it at all extraordinary to hear the great mechanician and engineer detailing and expounding, for hours together, the metaphysical theories of the German logicians, or criticising the measures or the matter of the German poetry.

His astonishing memory was aided,

no doubt, in a great measure, by a still higher and rarer faculty—by his power of digesting and arranging in its proper place all the information he received, and of casting aside and rejecting, as it were instinctively, whatever was worthless or immaterial. Every conception that was suggested to his mind seemed instantly to take its place among its other rich furniture, and to be condensed into the smallest and most convenient form. He never appeared, therefore, to be at all incumbered or perplexed with the verbiage of the dull books he perused, or the idle talk to which he listened; but to have at once extracted, by a kind of intellectual alchemy, all that was worthy of attention, and to have reduced it to his own use, to its true value and to its simplest form. And thus it often happened, that a great deal more was learned from his brief and vigorous account of the theories and arguments of tedious writers, than an ordinary student could ever have derived from the most faithful study of the originals; and that errors and absurdities became manifest from the mere clearness and plainness of his statement of them, which might have deluded and perplexed most of his hearers without that invaluable assistance.

It is needless to say, that with those vast resources, his conversation was at all times rich and instructive in no ordinary degree; but it was, if possible, still more pleasing than wise, and had all the charms of familiarity, with all the substantial treasures of knowledge. No man could be more social in his spirit, less assuming or fastidious in his manners, or more kind and indulgent towards all who approached him. He rather liked to talk, at least in his latter years; but though he took a considerable share of the conversation, he rarely suggested the topics on which it was to turn, but readily and quickly took whatever was presented by those around him, and astonished the idle and bar-

ren propounders of an ordinary theme, by the treasures which he drew from the mine which they had unconsciously opened. He generally seemed, indeed, to have no choice or predilection for one subject of discourse rather than another, but allowed his mind, like a great cyclopædia, to be opened at any letter his associates might choose to turn up, and only endeavoured to select from his inexhaustible stores what might be best adapted to the taste of his present hearers. As to their capacity, he gave himself no trouble; and, indeed, such was his singular talent for making all things plain, clear, and intelligible, that scarcely any one could be aware of such a deficiency in his presence. His talk, too, though overflowing with information, had no resemblance to lecturing or solemn discoursing, but, on the contrary, was full of colloquial spirit and pleasure. He had a certain quiet and grave humour, which ran through most of his conversation, and a vein of temperate jocularly, which gave infinite zest and effect to the condensed and inexhaustible information which formed its main staple and characteristic. There was a little air of affected testiness, and a tone of pretended rebuke and contradiction, with which he used to address his younger friends, that was always felt by them as an endearing mark of his kindness and familiarity, and prized accordingly far beyond all the solemn compliments that ever proceeded from the lips of authority. His voice was deep and powerful, though he commonly spoke in a low and somewhat monotonous tone, which harmonized admirably with the weight and brevity of his observations, and set off to the greatest advantage the pleasant anecdotes which he delivered with the same grave brow and the same calm smile playing soberly on his lips. There was nothing of effort indeed, or impatience, any more than of pride or levity, in his demeanour;

and there was a finer expression of reposing strength, and mild self-possession in his manner, than we ever recollect to have met with in any other person. He had in his character the utmost abhorrence for all sorts of forwardness, parade and pretensions; and, indeed, never failed to put all such impostors out of countenance, by the manly plainness and honest inrepidity of his language and deportment.

In his temper and dispositions he was not only kind and affectionate, but generous and considerate of the feelings of all around him, and gave the most liberal assistance and encouragement to all young persons who showed any indications of talent, or applied to him for patronage or advice. His health, which was delicate from his youth upwards, seemed to become firmer as he advanced in years; and he preserved, up almost to the last moment of his existence, not only the full command of his extraordinary intellect, but all the alacrity of spirit, and the social gaiety which had illuminated his happiest days. His friends in this part of the country never saw him more full of intellectual vigour and colloquial animation, never more delightful or instructive, than in his last visit to Scotland, in autumn, 1817. Indeed, it was after that time that he applied himself, with all the ardour of early life, to the invention of a machine for mechanically copying all sorts of sculpture and statuary, and distributed among his friends some of its earliest performances, as the productions of a young artist just entering on his 83d year.

This happy and useful life came at last to a gentle close. He had suffered some inconveniences through the summer; but was not seriously indisposed till within a few weeks from his death. He then became perfectly aware of the event which was approaching; and with his usual tranquillity and benevolence of nature,

seemed only anxious to point out to the friends around him the many sources of consolation, which were afforded by the circumstances under which it was about to take place. He expressed his sincere gratitude to Providence for the length of days with which he had been blessed, and his exemption from most of the infirmities of age, as well as for the calm and cheerful evening of life that he had been permitted to enjoy, after the honourable labours of the day had been concluded. And thus, full of years and honours, in all calmness and tranquillity he yielded up his soul, without pang or struggle, and passed from the bosom of his family to that of his God!

He was twice married, but has left no issue but one son, long associated with him in his business and studies, and two grand-children by a daughter who predeceased him. He was a fellow of the Royal Societies both of London and Edinburgh, and of the few Englishmen who were elected members of the National Institute of France. All men of learning and science were his cordial friends; and such was the influence of his mild character and perfect fairness and liberality, even upon the pretenders to these accomplishments, that he lived to disarm even envy itself, and died, we verily believe, without a single enemy.

[*London Times.*]

At the recent sale of the late Mr. B. Tompkins' prime Herefordshire cattle, one cow and her calf (a two years old bull) sold for the sum of nine hundred and fifty pounds: four bulls for one thousand and seventy-one pounds; and two bull calves, for three hundred and sixty-two pounds five shillings!

The king of England is now in the 60th year of his reign—a reign longer in its duration, by nearly four years, than that of any sovereign of England, that of Henry the 3d being only 56 years.



A Mr. Wright, of London, proposes, in an English paper, to institute a cottage society, in shares of ten pounds sterling each, for the purpose of procuring lands, either waste or by purchase, to be divided into lots, from four to twelve acres each, whereon to erect cottages, for the accommodation of the poor. Mr Wright considers the monopoly of small farms by the great landholders, as the principal cause of the prevailing pauperism in England, by having thrown too great a mass of the population into the towns. He computes that, from the enclosure of commons and waste lands, within the last fifty years, there have been 120,000 small farms and cottages annihilated, which, at five souls each, gives 600,000 persons who have been driven from the pursuits of agriculture.

### Light without Heat or Combustion.

EXTRACT OF A LETTER.

"I have lately seen an account of a discovery of a singular and highly important character, announced in the latter part of August, at Paris, by a Professor *Meinike*, (a German probably) viz. an artificial *gas*, confined in *glass*, assuming, by the electric shock, a permanent, steady light, without *heat* or *combustion*!

"Here is a grand desideratum, indeed—a candle which can be thrust into *carded cotton* innocuous, or into a cistern of water unextinguished; which can be placed under one's pillow while we sleep, and taken out at pleasure. Our houses may be built with it in such a manner as to avoid the necessity of those cold holes of winter—windows.

"The whale may keep his *blubber*, and the shark his *liver*; the coasts of the ocean may be lined with those newly discovered (*Pharoi*) light bearers; they may be sunk on reefs, and *shine up information* through the deep; and, by anchoring them in lines

through oceans, we may mark the *ship road*, and have *guide posts* which tell the best path, for each month in the year, across the parallels of this ball. Extravagant as this may seem, I assure you that I have often entertained the idea that an insulated mass of *electron*, (according to Augustus B. Woodward,) or some *phosphorus*, might be produced in a permanently useful form. We now *bottle up lightning*—we *cork up* the enemy of the *small pox*, and let him out at pleasure; we see our way by peeping at the skies, or into a box, (mariner's compass,) where we keep a little modicum of *polar essence*, to steer by, &c. You recollect that, in 1799, a hearty laugh was raised against the democrats, by comparing them to the philosopher of Luggnagg, extracting *sunbeams from cucumbers*. Dean Swift would have put into his philosophical *whim-whams* the bottling of lightning, together with the extracting of sun-beams from cucumbers, had he thought of it, or known that it was ever dreamed of. May Congress soon be supplied, every man of them, with a *pocket light* upon this new plan!"

The ingenious writer of this letter, adds the correspondent who communicated it, might have added, that this invention will be of excellent service to Captain Symmes and his fellow travellers, among the *concentric spheres* in the interior of our planet.

[*Nat. Int.*

### Whale Fisheries.

Our whale fisheries are, perhaps, more flourishing now than at any former period. I have formed an estimate of the probable amount thus employed from Nantucket, Martha's Vineyard, and this port, which would be at risk in case of a war with Spain, which may awaken the attention of those whom it may concern. From New Bedford, there are round Cape



Horn or on their passage, 18 ships and 1 brig, whose tonnage is 5347 tons; and they with their outfits cost

\$565,000

Their return cargoes would probably amount in value to

800,000

From the Vineyard there are two ships which cost

50,000

Their return cargoes would probably amount to

93,000

From Nantucket fifty ships, which probably cost

1,350,000

Their return cargoes would probably amount to

2,342,000

From New Bedford, on this side Cape Horn, there are eleven ships and eight brigs, which probably cost

277,000

Their return cargoes probably will amount to

363,000

From Nantucket ten ships, which probably cost

140,000

And their return cargoes will probably amount to

227,000

Amounting in all to \$6,000,000  
*New Bedford Paper.*

### Fire-Places.

FROM THE DOWNINGSTON REPUBLICAN.

*Fire-places*, for warming rooms, have been for a long time in use; and the best plan for constructing them continues to be an interesting subject of investigation.

Whether or not fire-places and chimneys are of very ancient date, and mentioned by Virgil Appian, and Aristophanes, or whether they are of more modern invention, is not of much practical importance; and may be left to philosophers to determine. But as the proper construction of a chimney and fire-place is one of the greatest comforts of domestic life, I cannot doubt but that government will grant me a handsome premium for making public an unerring rule by which they can be so built as never to fail of drawing well, without emitting any smoke in-

to the apartment. When the principle was first discovered by me, I wondered how it could so happen, that we had any defective chimnies amongst us; for I remembered to have heard that Dr. Franklin and count Rumford had devoted much attention to this subject, and must, of course, as I thought, have discovered a principle so plain and self-evident; and consequently, every mechanic must have learnt it, as not they only were interested in it, but every one of the civilized world.— After thinking of it in this way, I took an opportunity of inquiring into their opinions, and I find that the principle was never new to either of them; and as far as I know, I am the first and only discoverer of it. The principle consists simply in making the size of the flue bear a certain proportion to the size of the fire-place in front. To ascertain what would be the smallest proportion which the flue would bear to the front of the fire-place, would require some experiments. But it is probable that a fire-place  $2\frac{1}{2}$  feet square in front, would draw well enough to carry up all the smoke, by a flue 12 by 14 inches, and probably by a one foot square: or even less may probably do.

If one foot square, would carry all the smoke of such a fire-place, the proportion would be 144 to 900, or a little more than  $\frac{1}{4}$ , and a little less than  $\frac{1}{2}$ . But for greater certainty, we will say  $\frac{1}{2}$  is the proper proportion, and that a flue to a fire-place  $2\frac{1}{2}$  feet square, shall be 12 by 15 inches. If the front be twice that size, (3 feet 6 and near a half square) then the flue or chimney must be 12 by 30 inches, or near 19 inches square. If it be three times the first size, or near 4 feet 4 inches square, then the flue must be 12 by 45—15 by 36, or nearly  $23\frac{1}{4}$  inches square. Or if it be four times the size of the first, or 5 feet square, the flue must be equal to nearly 27 inches square, and so accordingly, whatever may be the di-

mensions of the fire-place in front. I do not know that a lesser proportion would not do : and whatever experience may establish, as that best adapted to answer the end proposed, it will not invalidate the principle laid down, but confirm it. One thing, however, is true, that the smaller the fire-place is in proportion to the flue, the harder it will draw, and by being thus proportioned, it may have any degree of draught given to it at pleasure, from that of an air furnace to that which will scarcely draw up the smoke. Any one may convince himself of the truth of this doctrine, by taking a board and closing up the fire-place, downwards from the mantle, and in proportion as it diminishes by the board moving downwards, the power of its draught will be increased. Franklin was aware of this fact, but was ignorant of the principle on which it depended, as he supposed the height of the chimney, and not its dimensions governed the fact itself,—and hence mentions that the higher the chimney, the larger the opening may be : and that  $2\frac{1}{2}$  feet square may be risked on a lower floor and  $1\frac{1}{2}$  on the upper, &c. The common ten plate stove furnishes an example of the truth of this principle : when the large fire door is open, the stove will smoke, because the large door is an over proportion in size to the size of the pipe—but shut the large door and leave the small one open, the stove immediately draws like a furnace, because its area is smaller than the area of a section of the pipe. If it were true that  $2\frac{1}{2}$  feet square was the largest size which could be made to draw well, it would indeed be an unfortunate fact, as we could never have a comfortable kitchen fire place—but if the principle here laid down be true, we can, with equal certainty, build a fire-place ten feet wide and five high, or of greater dimensions if we choose.

The height of the chimney I believe to be a matter of no importance

to the draught, and that a low one will draw as well as a high one. The worst smoking chimney that I ever saw was about 47 feet high, in my own house : it smoked because it was too small, and was cured by adding to it the flue of a fire-place directly above it ; on account of which I had to lose a fire-place on the 2d floor. In this case the size of both chimneys was barely sufficient to vent the smoke of the lower one. The height is a subject which I have not investigated, but it strikes me that a low chimney is most favourable to drawing well : if any one want an explanation on it, I will give it again ; but it cannot be of much practical importance. The fashion of a fire-place is of no importance to the draught : it may be made to please the fancy of the builder. I, however, should prefer one something near count Rumford's plan. The throat of the chimney may be contracted or not at pleasure ; but for beauty and advantage of heat, I should prefer having the back drawn forward and the throat narrowed, more especially in a low fire-place. There may be local contingent circumstances connected with chimneys, which cause them to smoke, and must have appropriate remedies : but such do not effect the general principles here laid down.

Smoke, from fires, is naturally carried upward by the heated air, which is specifically lighter than the surrounding atmosphere, and consequently ascends, carrying the smoke with it, and if it meet with no resistance, will pass up the chimney ; but if that be too small to vent it, it regurgitates, as it were, into the apartment ; which can only be remedied on the principle heretofore laid down.

It might be asked, why will not a small chimney vent all the smoke of a small fire, in a large fire-place ? Two reasons may be assigned : First, the heat of such fire cannot produce a brisk enough current of rarified air to carry the smoke, and that which is

heated, not having free vent, it whirls in eddies into the apartment. Secondly, smoke, in itself, is specifically heavier than atmospheric air; consisting of aqueous vapour, carbonic acid, and oxid of carbon, and coming in contact with air not much heated, and parting with a portion of its own heat, it has then no disposition, in itself, to ascend. But this would lead to a discussion foreign to my present subject.

Yours, &c. N.

Samuel Sprigg, Esq. has been elected by the legislature, governor of Maryland; and Thomas Mann Randolph governor of Virginia, in the room of Mr. Preston, whose constitutional term of office has expired.

*List of the Members*  
OF THE  
SIXTEENTH CONGRESS.  
SENATE.

<i>New Hampshire.</i>			
David L. Morrill,	terms end in	1823	
John F. Parrott,*	- - -	1825	
<i>Massachusetts.</i>			
Prentiss Mellen,	- - -	1821	
Harrison G. Otis,	- - -	1823	
<i>Rhode Island.</i>			
William Hunter,	- - -	1821	
James Burrill, Jr.	- - -	1823	
<i>Connecticut.</i>			
Samuel W. Dana,	- - -	1821	
James Lanman,*	- - -	1825	
<i>Vermont.</i>			
Isaac Tichenor,	- - -	1821	
William A. Palmer,	- - -	1825	
<i>New York.</i>			
Nathan Sandford,	- - -	1821	
- - -	- - -	1825	
<i>New Jersey.</i>			
James J. Wilson,	- - -	1821	
Mahlon Dickerson,	- - -	1823	
<i>Pennsylvania.</i>			
Jonathan Roberts,	- - -	1821	
Walter Lowrie,*	- - -	1825	
<i>Delaware.</i>			
Outterbridge Horsey,	- - -	1821	
Nicholas Vandyke,	- - -	1823	
<i>Maryland.</i>			
William Pinkney,			
Edward Lloyd,			
<i>Virginia.</i>			
James Barbour,	- - -	1821	
John W. Eppes,	- - -	1823	
<i>North Carolina.</i>			
Montfort Stokes,	- - -	1823	
Nathaniel Macon,	- - -	1825	

<i>South Carolina.</i>			
William Smith,	- - -	1823	
John Gaillard,	- - -	1825	
<i>Georgia.</i>			
Freeman Walker,*	- - -	1823	
John Elliot,*	- - -	1825	
<i>Kentucky.</i>			
John J. Crittenden,	- - -	1823	
William Logan,*	- - -	1825	
<i>Tennessee.</i>			
John H. Eaton,	- - -	1821	
John Williams,	- - -	1823	
<i>Ohio.</i>			
Benjamin Ruggles,	- - -	1821	
William A. Trimble,*	- - -	1825	
<i>Louisiana.</i>			
Henry Johnson,	- - -	1823	
James Brown,*	- - -	1825	
<i>Indiana.</i>			
James Noble,	- - -	1821	
Waller Taylor,	- - -	1825	
<i>Mississippi.</i>			
Walter Leake,	- - -	1821	
Thomas H. Williams,	- - -	1823	
<i>Illinois.</i>			
Jesse B. Thomas,	- - -	1823	
Ninian Edwards,	- - -	1825	
<i>Alabama.</i>			
John W. Walker,*			
William R. King,*			

HOUSE OF REPRESENTATIVES.

<i>New Hampshire—6.</i>			
Joseph Buffum, Jr.*	Arthur Livermore,		
Josiah Bartlett,	William Plumer, Jr.*		
Clifton Clagget,	Nathaniel Upham.		
<i>Massachusetts—20.</i>			
Benjamin Adams,	Enoch Lincoln,		
Samuel C. Allen,	Samuel Lathrop,*		
Joshua Cushman,	Jonathan Mason,		
Edward Dowse,	Marcus Morton,		
Walter Folger, Jr.	Jeremiah Nelson,		
Timothy Fuller,	James Parker,*		
John Holmes,	Henry Shaw,		
Mark L. Hill,*	Zabdiel Sampson,		
Martin Kinsley,*	Nathaniel Silsbee,		
Jonas Kendall,*	Ezekiel Whitman.		
<i>Vermont—6.</i>			
Samuel C. Crafts,	Charles Rich,		
Ezra Meech,*	Mark Richards,		
Orsamus C. Merrill,	William Strong.*		
<i>Rhode Island—2.</i>			
Samuel Eddy,*	Nathaniel Hazard.*		
<i>Connecticut—7.</i>			
Henry W. Edwards,*	John Russ,*		
Samuel A. Foote,*	James Stevens,*		
Jonathan O. Mosely,	Gideon Tomlinson.*		
Elisha Phelps,*			
<i>New York—27.</i>			
Nathaniel Allen,*	Harmanus Peck,*		
Caleb Baker,*	Nathaniel Pitcher,*		
Walter Case,*	Jona. Richmond,*		

Robert Clark,  
Jacob H. De Witt,\*  
John D. Dickenson,\*  
John Fay,\*  
William D. Ford,\*  
Ezra C. Gross,\*  
Aaron Hackley, Jr.\*  
George Hall,\*  
Joseph S. Lyman,\*  
Henry Meigs,\*  
Robert Monell,\*

Ebenezer Sage,\*  
Henry R. Stoops,  
Randall S. Street,\*  
James Strong,\*  
John W. Taylor,  
Caleb Tompkins,  
Albert H. Tracy,\*  
Sol. Van Renselaer,\*  
Peter H. Wendover,  
Silas Wood,\*

*New Jersey—6.*

Ephraim Bateman,  
Joseph Bloomfield,  
John Condit,\*

John Linn,  
Bernard Smith,\*  
Henry Southard.

*Pennsylvania—23.*

Henry Baldwin,  
Andrew Boden,  
Wm. Darlington,\*  
George Dennison,\*  
Samuel Edwards,\*  
Thomas Forest,\*  
David Fullerton,\*  
Samuel Gross,\*  
Joseph Heister,  
Joseph Hemphill,\*  
Jacob Hibsliman,\*  
Jacob Hostetter;

Jacob Humphreys,\*  
Wm. P. Maclay,  
David Marchand,  
Robert Moore,  
Samuel Moore,  
John Murray,  
Thomas Patterson,  
Robert Plaison,\*  
Thomas J. Rogers,  
John Seargeant,  
James Wallace.

*Delaware—2.*

Willard Hall,

Louis Me Lane.

*Maryland—9.*

Stephenson Archer,\*  
Thomas Bayly,  
Thomas Culbreth,  
Joseph Kent,\*  
Peter Little,

Ralph Neale,\*  
Samuel Ringgold,  
Samuel Smith,  
Henry R. Warfield,\*

*Virginia—23.*

Mark Alexander,\*  
Wm. Lee Ball,  
Philip P. Barbour,  
Wm. A. Burwell,  
John Floyd,  
Robert S. Garnett,  
James Johnson,  
James Jones,\*  
William M'Coy,  
Charles F. Mercer,  
Hugh Nelson,  
Thomas Newton,

Severn E. Parker,\*  
James Pindall,  
James Pleasants,  
John Randolph,\*  
Ballard Smith,  
Alexander Smyth,  
George F. Strother,  
T. Van Swearingen,  
George Tucker,\*  
John Tyler,  
Jared Williams,\*

*North Carolina—13.*

H. G. Burton,\*  
John Culpepper,\*  
William Davidson,  
Welden N. Edwards,  
Charles Fisher,  
Thomas H. Hall,  
Charles Hook,\*

Lemuel Sawyer,  
Thomas Settle,  
Jesse Slocumb,  
James S. Smith,  
Felix Walker,  
Lewis Williams.

*South Carolina—9.*

Joseph Brevard,\*  
Elias Earle,  
James Ervin,  
William Lowndes,  
John M'Cready,

James Overstreet,\*  
Charles Pinckney,\*  
Eldred Simkins,  
Sterling Tucker.

*Georgia—6.*

Joel Abbott,  
Thomas W. Cobb,  
Joel Crawford,

John A. Cuthbert,\*  
Robert R. Reid,  
William Terrell.

*Kentucky—10.*

R. C. Anderson, Jr.  
William Brown,  
Henry Clay,  
Benjamin Hardin,\*  
Alney M'Lean.\*

Thomas Metcalf,\*  
Tunstall Quarles,  
George Robertson,  
David Trimble,  
John Walker.

*Tennessee—6.*

Robert Allen,\*  
Henry H. Bryan,\*  
Newton Cannon,\*

John Cocke,\*  
Francis Jones,  
John Rhea.

*Ohio—6.*

Philemon Beecher,  
Henry Brush,\*  
John W. Campbell,

Samuel Herriek,  
Thomas R. Ross,\*  
John Sloane.\*

*Louisiana—Thomas Butler.*

*Indiana—William Hendricks.*

*Mississippi—Christopher Rankin.\**

*Illinois—Daniel P. Cook.\**

*Alabama—John Crowell.*

## DELEGATES FROM TERRITORIES.

*Michigan—William Woodbridge.*

*Missouri—John Scott.*

\* Not Members of the last Congress.

STATE OF THE  
THERMOMETER AT PHILADELPHIA,

During the Year 1819.

(Communicated for the Rural Magazine.)

Months.	AVERAGE.			Sun 3 Sun		
	Sun ris.	3 o'clo.	Sun set.	ris.	o'el.	s't.
1st.	29.2	40.	35.5	* 15	25	22
				† 40	53	50
2d.	30.5	41.6	38.	* 14	28	25
				† 52	60	55
3d.	30.8	41.9	37.7	* 16	28	26
				† 55	67	63
4th.	43.6	59.2	53.	* 28	43	39
				† 59	80	72
5th.	52.3	67.2	60.7	* 40	51	46
				† 63	82	73
6th.	65.	80.6	73.6	* 55	71	67
				† 73	89	82
7th.	67.5	82.2	75.6	* 60	76	67
				† 74	90	85
8th.	67.	82.4	75.	* 52	65	59
				† 77	90	85
9th.	61.	75.5	71.	* 48	57	55
				† 75	90	80
10th.	46.8	60.7	53.6	* 31	50	43
				† 65	76	70
11th.	40.3	53.6	48.5	* 23	38	35
				† 57	68	60
12th.	28.7	39.6	26.	* 25	33	32
				† 46	53	50

\* Coldest.

† Warmest.

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